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COMPUTERWORLD

Troubled insurer to gut IS

Declining service pushes Empire Blue Cross into outsourcing

By Julia King and Thomas Hoffman

Two weeks after firing about 20% of its systems staff, New York's largest health care insurer — calamity-ridden Empire Blue Cross/Blue Shield — is looking to outsource a large chunk of its information systems operations, *Computerworld* has learned.

Last week, J. Rock Tonkel, senior vice president of IS and administrative services, disclosed in an interview that Empire has solicited bids from Electronic Data Systems Corp., Computer Sciences Corp., IBM's Integrated Systems Solutions Corp and Andersen Consulting. Proposals are due back to the insurer by June 15. Tonkel said the company expects to make a decision before the end of the year.

Empire now employs 900 IS workers, and its 1994 IS expenditures totaled $135 million.

"As far as outsourcing is concerned, application development and deployment are both on the table," said Ray Murphy, vice president of systems and operations. "We didn't specify [in the request for proposals] how much of IS we would outsource. We left that up to bidders based on their under-

Troubled insurer, *page 127*

Voracious CA gobbles up Legent

By Thomas Hoffman and Steve Moore

Many customers reacted positively to last week's announcement that Computer Associates International, Inc. will buy longtime rival Legent Corp. for $1.8 billion. They cited, among other things, the possibility of product tie-ins.

"I think it's great," said Peter A. Ginocchio, manager of computer operations at Central States Funds in Rosemont, Ill. "We use Legent's SAR Express [on-line report distribution system], and I'd like to integrate that with CA scheduling and other software."

But some industry experts expressed caution about the deal. "Users shouldn't expect any real [product] integration any time soon. There are overlapping products that might go by the wayside," said Frank Dzubeck, president of Communications Network Architects, Inc. in Washington.

Among the products that may be in trouble is Legent's Xcom.

CA, *page 14*



Worth the price

Despite paying roughly three times Legent's annual revenue to acquire the Herndon, Va.-based firm, CA could reap considerably higher profits, particularly after it streamlines Legent's operations, financial analysts said

IBM to revamp NetView for AIX

By Patrick Dryden
RESEARCH TRIANGLE PARK, N.C.

IBM is preparing a midsummer unveiling of a revamped NetView for AIX that will let more network administrators run the console and will improve automated troubleshooting with techniques derived from the mainframe version.

These changes to IBM's premier management software for large distributed networks will be applied to other management programs as well, IBM officials said last week. The initial targets are the two dozen programs that make up the new SystemView for AIX, an administrative suite that can run network, system, storage and LAN-level tasks from an RS/6000 Unix workstation.

"This sets up the SystemView road map for integrated management with the other three [operating system] platforms — OS/2, OS/400 and MVS," said Lynn Wilczak, IBM's director of SystemView strategy.

IBM is trying to stay on schedule in its effort to blend diverse management functions on each plat-

IBM, *page 127*

Summer promise

IBM's upcoming revision of NetView for AIX will feature:

Console choice

Operators can share the RS/6000 management server from other workstations. Later, they will be able to do so from other platforms.

Event correlation engine

New technology from the host version promises powerful automation capabilities for responding to network events.

AlliedSignal reinvents IS

Launches unique software to track quality



Allied's Eric Singleton: *'Total quality is about doing it right the first time'*

By Julia King and Stuart J. Johnston

In an about-face from traditional IS project development, AlliedSignal Technical Service Corp.'s information systems group is reinventing itself as a creator and distributor of its own shrink-wrapped software.

Beginning in early June, the Columbia, Md.-based business unit of AlliedSignal, Inc. will distribute thousands of copies of the first version of its total quality manage-

AlliedSignal, *page 16*

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◆ For Frank Guzzardi and other survey respondents, assignment to challenging projects is a top motivator

By Candee Wilde

It doesn't take much to turn a dream job into bedlam, so smart companies are not leaving job satisfaction to chance. Information systems workers report they are under more stress as they struggle to meet the demands of ever-increasing workloads. But this year, the news has gotten better. At companies where the IS department has been assigned to challenging projects using new technology, job satisfaction and performance are on the rise, according to the Ninth Annual *Computerworld* Job Satisfaction Survey.

"With this new technology, we're all learning as we go," says Thomas E. Smith, vice president of IS at Midwest Security Insurance in Onalaska, Wis. The firm has tripled in size during his six years there, and demands on IS have skyrocketed, he says. But Smith finds the job "fast-paced and exciting" — not stressful. Why?

Management, *page 81*

COMPUTERWORLD'S JOB SATISFACTION SURVEY NINTH ANNUAL

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What's Inside

May 29, 1995



E. Ted Prince: *Internet security is just fine*

SoundOff!

Is the Internet secure?

You're more likely to get your credit-card number stolen over the phone than you are to lose data over the Internet, says industry watcher E. Ted Prince. But William Cheswick, Internet guru at AT&T Bell Labs, warns that no one is safe on the 'net. See **In Depth**, page 94.



William Cheswick: *You're nuts if you don't take precautions*

John Sax

■ Fighting back against PC server incursions into midrange shops, IBM will detail plans to expand **a 486-based processor board inside the AS/400** from a limited-use file server to a more general-purpose file and application engine for NetWare and OS/2 LAN Server networks. **NEWS**, *page 6*



■ **IBM tries to position its Advanced Peer-to-Peer Networking** and High Performance Routing network protocol software as the best way for SNA shops to get to the Asynchronous Transfer Mode networking future. But some skeptics say TCP/IP should provide an equivalent migration path. **NEWS**, *page 8*

■ Vendors have completed work on the next version of the application programming interface that **lets Windows applications participate on the Internet and Unix** networks. **NEWS**, *page 10*

■ Tomorrow **Intel will announce its 60/90-MHz Pentium chip**, which will feature Voltage Reduction Technology that reduces the chip's power draw by up to 30% and limits its hit on battery life. **NEWS**, *page 12*

■ Compaq may not be manufacturing big iron, but the company is betting that by next year it will be able to offer **mainframe-class performance by linking several PC servers** and bundling them with the appropriate software. **NEWS**, *page 14*

■ Meridian Data's **CD-ROM networking software is native to Windows**, which gets around the DOS access and memory hogging previously required. Users can also access all CD-ROM drives from one drive letter on a PC or workstation instead of the usual Windows limit of one drive to one drive letter. **NEWS**, *page 20*

■ Merger plans announced last week between the **top vendors of Smalltalk** tools are expected to spawn a product line that spans both desktop clients and back-end servers. **COMPUTER INDUSTRY**, *page 30*

■ Blue Cross/Blue Shield of Massachusetts has begun placing "health care ATMs" at major client sites. These are **multimedia kiosks** that provide various information on health plan programs, doctor lists and prescription information. **DESKTOP COMPUTING**, *page 42*

■ Five years after the product category was launched, vendors have yet to convince users of **what groupware should mean** to them. **WORKGROUP COMPUTING**, *page 47*

■ The **Token Ring market** is still growing strong despite the naysayers. **ENTERPRISE NETWORKING**, *page 53*

■ Edward D. Jones & Co. is proceeding slowly with the **rollout of a $100 million client/server architecture**. **LARGE SYSTEMS**, *page 63*



■ Rival **"geocoders" debut** to help companies locate customers on digital maps for market analysis. **APPLICATION DEVELOPMENT**, *page 73*

■ **Heard it through the grapevine?** Managers discuss how they squelch rumors about layoffs, downsizings and technology changes with honesty and fast footwork. **CAREERS**, *page 102*

■ How equipment is purchased is critical. Unfortunately, **much product acquisition is sloppy** and ad hoc. **MARKETPLACE**, *page 116*

■ Law and order in the IS acquisition process has yielded to chaos — if not all-out anarchy — **Bill Laberis** says. **VIEWPOINT**, *page 34*

■ **Frank Monteleone** says there is still a lot of re-engineering — or whatever new tag is put on it — to do, and information systems organizations must be critical participants. **VIEWPOINT**, *page 35*

■ Use business events to tie together disparate legacy applications, **Patricia Seybold** suggests. **VIEWPOINT**, *page 35*

■ If client/server is here to stay, IS must accept its conflicting forces and, on its own authority, impose some order, **Charles Babcock** says. **COMMENTARY**, *page 128*

How do you measure up?

How does your IS department compare with the Computerworld Premier 100? Fill out the Premier 100 survey, and we'll send you a free report showing how your operation compares with Premier 100 averages. Consolidated information from the surveys we collect may be published in a future Premier 100 issue. Send a request on company letterhead to Paul Gillin, Editor, Computerworld, 375 Cochituate Road, Framingham, Mass. 01701 or E-mail to survey@cw.com.

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Executive Briefing

As Microsoft withdraws its bid to buy Intuit, its competitors are looking at The Microsoft Network as their next target. *Page 4.* **Microsoft and Lotus** may be pitching their products as replacements for each other, but the reality is that users plan to use both Notes and Microsoft's Exchange Server. *Page 26.* **Microsoft's forthcoming Windows 95** is being bundled with a slew of utilities, but users say the need for certain third-party utilities will not go away. *Page 39.* Integra readies a tool to allow **paging to be added to Microsoft's BackOffice and Exchange Server** applications. *Page 50*

Microsoft is revamping its volume licensing program — with the end costs for users still unclear — as other vendors offer **on-line support**. *Page 41*

Sears will equip more than 14,000 technicians with wireless devices to improve customer service. Meanwhile, McCaw and PCs Compleat team up to provide one-stop mobile shopping, plus there's a new Reflection to check out. *Pages 6 and 56*

Notes shops have recently begun experimenting with Hypertext Transport Protocol servers and Hypertext Markup Language browsers such as Mosaic. *Page 26.* **Microsoft's Windows NT** makes a dent as a Web server, and **Spyglass'** Andrew Parker talks about security and Internet development. *Pages 53 and 54*

Sun quietly launches a project to push its largest customers onto the **Solaris 2.x operating system** as it tells attendees at its developer's conference that OpenStep for Solaris will not ship until next spring. *Page 12.* **Sun customers are seeking assurances** that the company will remain focused on their needs as it seeks growth in new markets. *Page 48*

Sybase confirms delays in delivering massively parallel software on Hewlett-Packard, IBM and Sun platforms, while users discover the benefits of **building data warehouses**. *Pages 2 and 63*

Powersoft will address customer complaints about slow performing applications with its next release of PowerBuilder. *Page 2.* **The Smalltalk language** is growing as a means to help information systems transition from Cobol to client/server, and developers crave ease of use above all else. *Pages 73 and 74*

The 5th Wave *by* Rich Tennant



"I THINK YOU'VE MADE A MISTAKE. WE DO PHOTO RETOUCHING, NOT FAMILY PORTRAITS... OOOH, WAIT A MINUTE- I THINK I GET IT!"

Sybase delays Navigation Server, citing complexity

By Kim S. Nash

Sybase, Inc. last week confirmed it is late porting key massively parallel processor (MPP) software to Hewlett-Packard Co., IBM and Sun Microsystems, Inc. platforms.

Sybase's Navigation Server is a high priority for Sybase users planning large data warehousing applications on MPP systems. Without it, the Sybase database cannot operate well in an MPP setup. It was due to enter beta testing this quarter on hardware other than that from development partner AT&T Global Information Solutions.

Sybase had promised a third-quarter 1995 general availability date for those ports.

The lowdown on Navigation Server

Navigation Server is a companion product for Sybase's System 10 database designed to let System 10 work on large MPP platforms. Although Sybase says Navigation Server can be used in transaction processing applications, the product is aimed at data warehouse users. It is priced at $150,000, plus $14,000 per CPU.

"My guess is that we will not deliver on that schedule," acknowledged Dennis McEvoy, vice president of products at Sybase in Emeryville, Calif.

He declined to say when the products might ship, but sources close to Sybase estimated users face a lag of three to six months.

The holdup is a symptom of "just normal situations anyone encounters in building complicated software," McEvoy said.

However, delays in putting Navigation Server on the three popular hardware platforms could hurt Sybase, Informix Software, Inc. and Oracle Corp. already offer products for large-scale warehousing on a variety of hardware.

Bankers Trust Co. in New York and Wiltel Business Network in Chesterfield, Mo., for example, are waiting for Navigation Server on non-AT&T GIS systems, a Sybase spokesman said.

However, Sybase did demonstrate a prebeta version of Navigation Server running on IBM's SP2 platform at the Sybase user show two weeks ago, McEvoy said.

In an unrelated move, Sybase is taking over development duties for the product from partner AT&T GIS, which had started building what would become Navigation Server before signing a joint development deal with Sybase a few years ago.

Some users have criticized Navigation Server for not fully supporting Sybase's database, System 10. Navigation Server was built on the preceding Release 4.9 database and does not support some key System 10 features, such as triggers and image data types.

Such incompatibility, in part, prompted Kwasha Lipton, an employee benefits consultancy in Fort Lee, N.J., to shelve Navigation Server after testing with it for several months. Kwasha dropped the product after pilots revealed that Navigation Server was unsuitable for the firm's project to downsize transaction processing applications from an IBM mainframe, said Ken Walpert, chief information officer at Kwasha.

Yet The Chase Manhattan Bank NA is pleased with the product so far, said Jonathan Vaughn, vice president of applied technology at the New York bank. Chase has begun deploying a 560G-byte data warehouse application to its credit-card marketing group.

Corrections

In the May 1 *Global 100* magazine supplement, Sumitomo Bank Ltd. of Japan was incorrectly listed as Sumitomo Group on pages 6, 62 and 64. The following numbers for fiscal year 1994 should have been listed with Sumitomo Bank Ltd. on page 62: revenue: $25.7 billion; profit: $323 million.

The May 8 Guide to Systems Integrators contained inaccuracies about a systems integration contract at Boston Market, Inc. Boston Market did not replace Ernst & Young with BSG to run a $5 million project. The company uses both firms, pared back its commitment to each and added its own staff. No single project is in excess of $1 million at the firm. No single integrator leads technology projects at the company. Jeff Chasney of Vicorp Restaurants was incorrectly cited as the source of the information.

Long-awaited compiler to appear in next PowerBuilder

Tool due early next year

By Elizabeth Heichler and Rosemary Cafasso

Customers who gather next week for Powersoft Corp.'s international user conference in Orlando, Fla., will be gratified to hear that the company finally plans to address their persistent woes over poor applications performance.

Powersoft will do that by including a compiler in the next release of PowerBuilder, which is expected by January.



The compiler is a key feature in this release of the popular client/server tool because it will allow developers to deliver speedier applications by generating true executable files, according to customers recently briefed by Powersoft at a San Diego user group meeting (see box below).

The current version of PowerBuilder generates application files that must be interpreted at runtime, a step that slows performance for end users.

"One of the big bugaboos with PowerBuilder is performance, and [providing a compiler] would be a very dramatic way to address the issue," said Ed Acly, an analyst at International Data Corp. in Framingham, Mass.

Officials at Powersoft, a unit of Sybase, Inc., told the San Diego user group that the compiler is the company's top development priority and will be released in an interim version in the next few months or as Version 5.0, which is expected by January 1996.

Wait is killing them

PowerBuilder users said they are eager to get their hands on a tool that can generate executable files. The emergence this February of such a technology in Borland International, Inc.'s Delphi client/server application development tool has made the issue more urgent, users said.

"Everybody wants the compiler. There are lots of people on the fence between Delphi and PowerBuilder, and the compiler can help stave off Borland," said Mike Packard, an applications developer at The Solution Source in San Diego who uses PowerBuilder.

However, Powersoft must do more than just ship a compiler if it is serious about delivering tools that can be used to build enterprise-class client/server applications, said Brent Williams, an analyst at Gartner Group, Inc. in Stamford, Conn.

"The compiler is not a cure-all; it just fixes some performance issues that current users have," Williams said.

Hitesh Dani, a senior programmer analyst at Hershey Canada, Inc., said he is very interested in the possibility of a compiler for PowerBuilder and the ability to generate executable files using the tool.

"If they were to come out with that, Delphi would lose a lot of heat," he said.

Promises, promises

Users are also eager to see Powersoft deliver on its promises of cross-platform support for the Macintosh and SunSoft, Inc.'s Solaris operating system. The company had initially planned to ship some of its cross-platform support, including the Macintosh version, early this year but delayed shipment until later this year.

"What's intriguing about PowerBuilder is the [potential for] multiplatform capabilities, but I was told there would be a Mac version three years ago, and it's still not out," said software developer Gerald Caussade, president of Data Warehousing Corp. in Fairfield, Iowa. Caussade wanted to use a higher-level language for both a prototyping and applications rollout and planned to use PowerBuilder. But he changed his mind and decided to work with Delphi when it was released.

John Robison, a software engineer at TravelNet, Inc., in Sunnyvale, Calif., said he has been counting on the Macintosh release and has heard the Macintosh support will be available in the fall.

A Powersoft official would not comment on user concerns that the cross-platform version of PowerBuilder will be delayed even further. Release dates will be disclosed when the company is within 30 to 60 days of shipping the product, the official said.

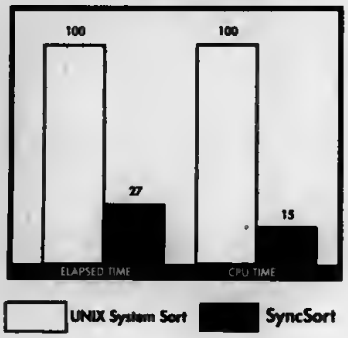
In the cards for PowerBuilder

- Delivery by January of a compiler that can generate compiled executable files for the first time.
- Features that address the need for a team development environment, including a more robust configuration management function to replace a check-in/check-out facility that users complain is error-prone.
- In the long term, Powersoft will move to a distributed object architecture to support multitiered client/server deployment.
- Extension of multiplatform support to IBM's AIX, Hewlett-Packard Co.'s HP-UX and the PowerMacintosh planned for Version 5.0.

Source: San Diego PowerBuilder User's Group members

The UNIX System Sort

PERFORMANCE



FUNCTIONS

	UNIX System Sort	SyncSort
RECORD FORMATS		
Fixed length binary	NO	**YES**
Variable length binary	NO	**YES**
ASCII Text	YES	**YES**
RECORD PROCESSING		
Selection	NO	**YES**
Reformatting	NO	**YES**
Summarization	NO	**YES**
Grouping	NO	**YES**
COLLATING SEQUENCES		
Standard ASCII	YES	**YES**
EBCDIC	NO	**YES**
User Defined	NO	**YES**
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Microsoft opponents go for blood

After Intuit victory, rivals take aim at Internet services bundled with Win 95

By Mitch Betts, Ellis Booker and Stuart J. Johnston

■ Having torpedoed the megamerger of Microsoft Corp. and Intuit, Inc., Microsoft's critics are now setting their sights on The Microsoft Network (MSN), which they charge will have an unfair advantage in the on-line services market once it ships in August.

America Online, Inc., Prodigy Services Co., CompuServe, Inc. and Microsoft nemesis Gary L. Reback, an attorney representing several unnamed software companies, are all urging the U.S. Department of Justice to force Microsoft to unbundle the MSN client software from Windows 95, *Computerworld* confirmed last week.

Immediately after the Microsoft/Intuit merger fell apart, Steve Case, America Online's president and chief executive officer, called on the Justice Department to create "a level playing field and maximize consumer choice by blocking Microsoft from using Windows as a marketing platform for Microsoft's own products and services, including Microsoft Network."

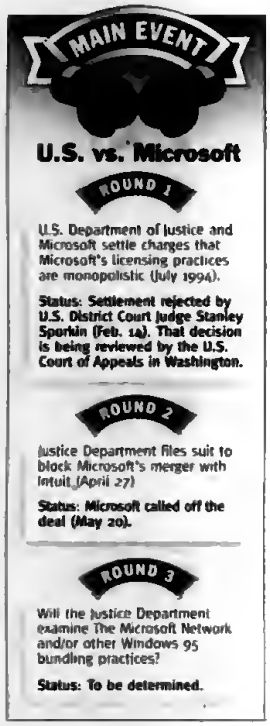
Digging in

Reback, a partner at Wilson, Sonsini, Goodrich & Rosati in Palo Alto, Calif., last week claimed Justice Department officials have already collected sufficient evidence and are "sympathetic" to competitors' concerns.

The legal argument is that Microsoft's "ironclad" monopoly in the PC operating system market is being leveraged in an attempt to monopolize the on-line services market, Reback explained.

"It's so pernicious. They have OEM deals with the operating system, and the network just comes with it. So the computer is going to come with the network client, which really gives them an unfair distribution advantage," he said.

However, the Justice Department refused to comment on the widespread belief that it is investigating the integration of MSN with Windows 95. Microsoft officials said they are unaware of any open investigation of the network.



Something to talk about

However, Prodigy was contacted by Justice Department lawyers about MSN about a month ago, said Brian Ek, a spokesman for Prodigy in White Plains, N.Y. "We furnished documents, and several of our people were interviewed," he said.

CompuServe has been in nearly continuous contact with the agency since July 1994, said Kent Stuckey, former general counsel and now director of product marketing at CompuServe.

Prodigy and CompuServe are concerned not only that the MSN client will be automatically distributed with each copy of Windows 95, but also that the MSN software is embedded as the default network. For example, Windows 95 prompts new users to connect to MSN for product registration, Stuckey complained.

Furthermore, Ek said Prodigy's long-standing exclusive distribution contract with PC vendor Packard Bell Electronics, Inc. had to be renegotiated late last year when Microsoft said Packard Bell could not order Windows 95 without the MSN features. "The OEMs have no choice in the matter," he said.



Lawyer Gary Reback *assails the 'pernicious' nature of The Microsoft Network*

Stuckey said the solution is either mandatory unbundling, a separate line of business for the network or an unbiased screen directory of all on-line providers.

In essence, Microsoft's enemies "smell blood" after the desktop software behemoth called off the $2 billion Intuit purchase in the face of what could have been a lengthy, costly, disruptive and embarassing antitrust trial.

The Justice Department was preparing to trot out internal Microsoft memos, former employees and other witnesses to support its deal-blocking case, filed last month in U.S. District Court in San Francisco [CW, May 1].

Microsoft offered a package of conditions that would have limited its behavior after the merger, but the Justice Department showed no interest in settling. "We viewed the conditions as a bunch of Band-Aids. They didn't address our fundamental concerns, so we rejected them," said Steven C. Sunshine, deputy assistant attorney general for mergers.

Just looking

Several antitrust experts said it is a sure bet that the Justice Department is looking at MSN, but it is not clear that it can build a strong antitrust case.

Legally speaking, the MSN bundling "is a much more complicated case for the government because Microsoft is not bundling a product, just the access software," said Joseph Kattan, an antitrust attorney at Morgan, Lewis & Bockius in Washington.

"Hardly a day goes by that I don't get a free [access] diskette from America Online or CompuServe in the mail, so it's not like companies have no way to reach the consumer," he said.

In fact, Microsoft's executive vice president for products, Mike Maples, made a similar point at an appearance in Washington on May 1. Maples stressed that although the MSN client software will be bundled with Windows 95, subscribing to the network service will be a separate transaction.

Novell, Inc., which was supposed to get Microsoft's Money package in the merger deal, will not go away totally empty-handed. A Novell spokesperson said the firm has no plans to buy Intuit, contrary to a published report, but Novell will "continue with our existing multiyear agreement to ship [Intuit's] Quicken with our Perfect Works product."

Senior editor Laura DiDio contributed to this report.

Spin control

At least three different reasons have been offered as to why Microsoft canceled its purchase of Intuit just three weeks after it vowed to fight antitrust charges and said it was 100% committed to the deal.

- **Microsoft's view:** The antitrust trial and other legal proceedings were expected to drag into mid-1996, in part because of government-requested delays. The decision was "strictly a matter of an unduly long delay in a very fast-paced marketplace," said Microsoft counsel William Neukom.
- **The government's view:** Microsoft reacted after reviewing the Justice Department's witness list and strong evidence of the merger's anticompetitive consequences, including internal memos from Microsoft. The department also rejected settlement offers.
- **An analyst's view:** The merger was becoming too costly for Microsoft. "What was initially valued as a $1.4 billion stock swap had turned into a $2 billion legal, public relations and press circus," said Karl Wong, an analyst at Dataquest, Inc. in San Jose, Calif. The merger had already cost $4 million in expenses, and the trial would have raised costs much higher.

—Mitch Betts and Stuart J. Johnston

Back in the race

The demise of the Microsoft/Intuit merger brought a big sigh of relief last week from the on-line banking community, which had feared that the software giant's model of electronic commerce might lock up the front-end relationship with the customer.

"If the deal had gone through, it would have been extremely difficult to compete against Microsoft/Intuit," said Ladd Willis, executive vice president of First Manhattan Consulting Group, a New York financial services consultancy.

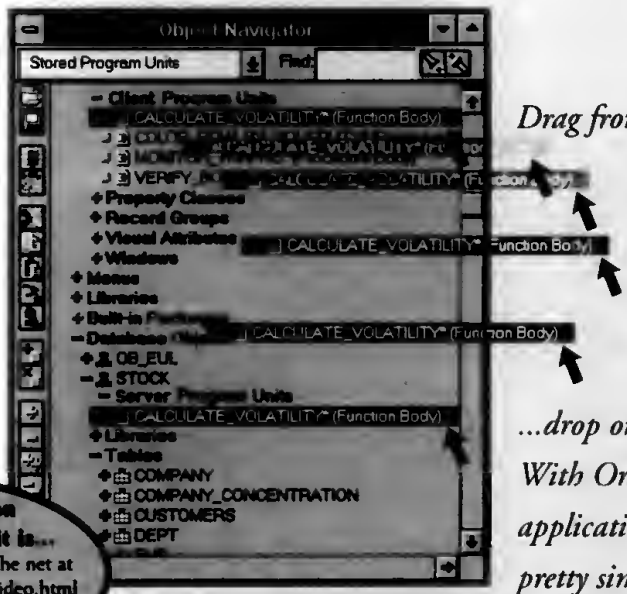
Many bankers loudly opposed the merger right from the get-go because Microsoft would have gotten "control over the customer, while the bank just becomes a menu item," said Rick Sellers, president of Huntington Service Co., the technology unit of Huntington Bancshares, Inc. in Columbus, Ohio. Sellers said he was interviewed by Justice Department lawyers about the Intuit deal three months ago.

Now the race is on among Microsoft, Intuit and other players to sign up more banks and customers. "Intuit is going to go off and make strategic alliances around the country" with other banks, predicted Kevin Roden, director of deposit and consumer banking systems at Bank of Boston. Although he would not directly acknowledge that Bank of Boston plans to have discussions with Intuit, Roden did admit that "anybody would be interested in talking with them. We need to be in that market in order to be competitive."

—Thomas Hoffman

Microsoft revamps volume licensing program. See page 41. **Microsoft stock** stays strong, Intuit tumbles. See page 125.

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Redefining Productivity: Second Generation Client Server Tool

Sears hits the road with wireless devices

Move will improve repair services

By Mindy Blodgett

After months of testing whether mobile communications can clear away some of the obstacles inherent in the repair business, Sears, Roebuck and Co. has made its decision: The future is wireless.

This fall, Sears Products Services, the nation's largest consumer repair and service organization, will equip more than 14,000 service technicians with rugged, wireless mobile computing devices.

The move is expected to vastly improve customer service, reduce time spent on repair calls and free up technicians from tedious paperwork duties, said Larry Finney, systems director at Sears in Hoffman Estates, Ill.



Sears' Larry Finney: *'We simply can't go without a program like this'*

Sears will begin its wireless revolution by equipping 1,000 technicians with devices produced by Itronix Corp., a subsidiary of Telxon Corp. in Akron, Ohio. It will then take 18 months to two years to roll out the program to all 14,000 workers, Finney said.

A major competitor, General Electric Information Services, is already rolling out wireless devices to its field-service employees in a similar operation. GEIS has given wireless terminals to 1,600 technicians [CW, Nov. 7, 1994].

"We are very excited about this," Finney said. "The way we work today and looking into the future, we simply can't go without a program like this. The goal is customer satisfaction, and customers want the convenience of same-day repairs and service."

Finney said technicians will be able to do billing, calculations and other functions on the devices.

Analysts said the move was significant, both for the players involved and for the wireless industry. As one of the largest wireless applications currently under way nationwide, Sears' decision is a big boost to wireless communications in general. Observers also said it offers a much-needed vote of confidence for ARDIS, a wireless pioneer with a shaky future.

ARDIS provides wireless transmissions on a radio network using base stations located in most U.S. metropolitan areas.

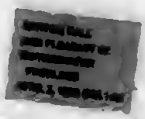
"Reports of ARDIS' demise have been a bit too premature," said William Frezza, an analyst at Wireless Computing Associates, Inc. in Yardley, Pa. Frezza added that Sears' move "is certainly a good thing for the future of wireless."

Problems along the way

The giant retailer had hoped to begin its rollout in the second half of 1994 but was delayed for various reasons, primarily the lack of a suitably rugged device that could accommodate Windows.

Lack of suitable devices has slowed or delayed wireless deployments at other large companies, including AMR Corp.'s American Airlines subsidiary.

Sears decided to forge ahead after evaluating a next-generation device from Itronix, Finney said. Details on the Itronix XC6000 were sketchy, but it is roughly the size of a subnotebook computer and can support multiple wireless protocols.



Sears also had a hand in the device's design. Finney said he challenged Itronix to build a wireless-enabled, Windows-capable notebook-like device that could withstand all weather conditions and survive Sears-specified drop, shock and vibration tests. Upgradability was also required.

"I thought they were going to tell me to forget it, that it was impossible, but they came through," he said.

Finney said it was also important not to build a device that would rule out use with the Cellular Digital Packet Data (CDPD) wireless network. CDPD is a TCP/IP-based technology that transmits data over the cellular network. "ARDIS is here now," he said. "And ARDIS is what we need for nationwide coverage. But we wanted to be open to CDPD also."

AS/400 fights PC server tide

IBM to bulk up internal 486 LAN server with support for NetWare and Notes

By Craig Stedman
SPECIAL TO CW

Fighting against a rising tide of PC servers breaking into midrange shops, IBM in June will try to turn the AS/400 into a whale capable of swallowing up more of the server plankton in its path.

As part of a long-awaited introduction of RISC AS/400 models, IBM will detail plans for bulking up a 486-based processor that currently runs inside the AS/400 as a limited-use file server. The device is being recast as a more general-purpose file and application engine for LANs.

The 486 board, called the File Server I/O Processor, was released in February in a file-only IBM OS/2 LAN Server implementation. Next month, IBM will add a Novell, Inc. NetWare version capable of doing both file and application serving, and it also will announce application support for the OS/2 version of Notes.

Customer interest piqued

IBM's strategy drew strong interest from some midrange customers. They said combining PC server functions within their AS/400s could reduce hardware costs and ease some of the systems management headaches caused by distributed servers.

"If IBM does a good job with that, chances are that more of our local serving work would go to the AS/400 off of our OS/2 servers," said Ken Smith, director of systems software at Canada Housing and Mortgage Corp. in Ottawa. "Support costs mean a lot to us, and they'll kill you on [PC] servers."

Canada Housing and Mortgage had hoped to do all of its file serving on AS/400s in its branch offices, but they were not up to the task, Smith added. The company now plans to take a second look, and it may also consider the AS/400 as a server for printing and software distribution applications.

Shipments of the NetWare-enabled processor board will start in the fourth quarter, according to sources at IBM's Technical Interchange developers conference here last week. The NetWare version can handle both files and applications written as NetWare Loadable Modules (NLM), according to AS/400 officials.

The initial LAN Server release only does file serving because OS/2 applications require that servers have an IBM OS/2 Presentation Manager user interface, said Dick Kisenden, program manager for application architecture at IBM's AS/400 Division in Rochester, Minn.

But NLMs generally can be managed from a console on a client PC, opening them up to AS/400 control. IBM is testing a small number of NLMs on the 486-based processor, and they "just seem to work," Kisenden said. "With OS/2, we have to take a more one-by-one approach."

Notes is the first OS/2 application being addressed and should be ready in the first quarter of next year, according to sources at the conference. After that ships, they said, IBM will try to create generalized development tools that customers can use to hook OS/2 applications to the AS/400.

David Ferrell, MIS manager at Norwood Promotional Products, Inc. in San Antonio, said being able to run his NetWare LANs from the AS/400 is "a tremendous enhancement." Data backup would be simplified, and the company "wouldn't have dual hardware expenses" anymore, he said.

Service with a smile

Midrange users cited the following benefits of combining PC server functions within their AS/400s:

Hardware costs can be reduced by eliminating stand-alone servers.

AS/400 requires less support and is easier to manage remotely.

Storage devices for the AS/400 are more reliable than PC storage.

AS/400 and network data can be backed up at the same time.

Security features are more advanced on the AS/400.

Look out below

While IBM's AS/400 Division is trying to douse the desire for PC servers, the computer giant's mainframe operation just jumped into bed with the server crowd.

At its developer's conference last week, IBM formally introduced a board-level System/390 processor embedded in one of the company's PS/2 servers. The PC Server 500 S/390 is targeted as a low-cost platform for off-loading application development and some low-end processing from full-size mainframes.

As IBM officials promised earlier this year, the server/mainframe combination costs about $80,000 with the MVS operating system included [CW, March 6]. To lure Unix developers to write System/390 applications, IBM said it will loan MVS and other key mainframe programs to software vendors for up to three years.

—Craig Stedman



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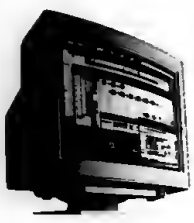
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IBM directs SNA users down path to ATM

By Craig Stedman
Staff Writer

IBM is trying to keep mainframe shops from leaving SNA behind by pointing them down a path that starts with the advanced routing software it introduced at an IBM technical conference here last week. That path leads to a future of wide-area networks based on Asynchronous Transfer Mode (ATM) technology.

IBM's High Performance Routing (HPR) software removes some big boulders that blocked Advanced Peer-to-Peer Networking (APPN), the distributed version of SNA. However, some skeptical users and analysts said ATM looks just as reachable from the TCP/IP side of the mountain.

"IBM has a definite evolution path for its transport, but there are equivalent paths for other transports," said Al Putre, director of communications architecture at Bell Sygma, Inc., the information systems and outsourcing subsidiary of Bell Canada, Inc. in Toronto.

Bell Sygma is assessing the future role of SNA and APPN in its operations, Putre said. The company may migrate its 3270 terminal applications to the HPR version of APPN. But it also is weighing the idea of making a clean break with SNA as part of a move toward TCP/IP-based applications built around the Open Software Foundation's Distributed Computing Environment, he added.

Already, Bell Sygma's networks are split about 50/50 between SNA on one side and TCP/IP and Banyan Systems, Inc.'s Vines LAN protocol on the other. "We're taking a lot of what used to be SNA away and breaking it down into the client/server realm," Putre said. "Our trend is toward more and more TCP/IP."

IBM networking executives claimed congestion control, bandwidth reservation and traffic prioritization features provided by an APPN/HPR combination will be needed to get the maximum efficiency out of high-bandwidth — and therefore high-cost — ATM networks.

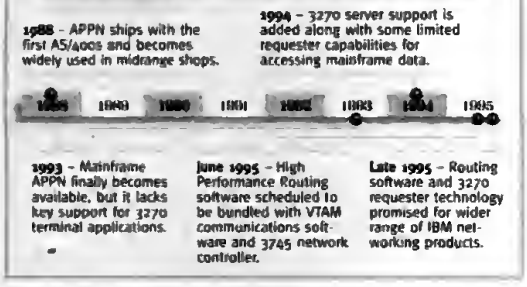
But IBM's pitch is just "marketing rhetoric," said David Passmore, president of Decisis, Inc., a networking consultancy in Herndon, Va. "They're hoping APPN will ride the coattails of ATM's momentum."

APPN use limited

Very few mainframe shops use APPN now because of shortcomings that are supposed to be addressed by HPR, which will finally ship to some of IBM's products next month [CW, May 22]. Even with HPR, only about a third of the SNA installed base will migrate to APPN, most likely the larger networks in transaction-heavy industries such as financial services and transportation, Passmore said.

The state of Illinois' central management services division in Springfield will start implementing APPN once the HPR-enabled products are available, said Dave Snyder, network development manager at the division. A switch to TCP/IP was mulled, "but some of that push has gone away," he said. "People are starting to understand that maintaining large router networks is a lot of work."

Ken Smith, director of system software at Canada Housing and Mortgage Corp. in Ottawa, said he hopes emerging multiprotocol software such as IBM's AnyNet product will allow users to isolate applications from the network protocol layer. That would make it easier to mix and match protocols such as APPN and TCP/IP without having to worry about rewriting code, he said.



News Shorts

Prodigy liable for libel

A New York Supreme Court judge ruled that **Prodigy Services Co.** in White Plains, N.Y., can be held responsible for the content of subscribers' on-line messages because Prodigy functions like a publisher with editorial control. The landmark ruling means that a $200 million libel suit filed by investment firm **Stratton Oakmont, Inc.**, after a Prodigy subscriber accused it of fraud, can proceed to trial [CW, Nov. 28, 1994]. Prodigy screens for obscenities but does not otherwise monitor the 60,000 messages posted each day.

Power outage stops air traffic

A power failure last week knocked out the air traffic control center for the three major airports serving the New York City area, blacking out radar screens and stranding thousands of passengers. The disaster was the third major failure in the past two months and has prompted Federico Pena, the U.S. Secretary of Transportation, to order an investigation by the **Federal Aviation Administration**. Last week's failure lasted six hours and delayed nearly 200 departures from John F. Kennedy International, La Guardia and Newark International Airports.

Office users to get Notes links

Users of **Microsoft Corp.**'s Office desktop suite will soon be able to store, organize and distribute Word and Excel documents using Notes, thanks to a third-party link set to debut this week. OfficeLink, from **Brainstorm Technologies, Inc.** in Cambridge, Mass., adds a simple menu item for Notes access to the standard Office menu interface and does not require users to work directly in Notes. The software is slated to ship next month, and the next release will add support for Microsoft PowerPoint presentations.

Outsourcers land TRW deals

Two separate outsourcing firms last week announced contracts to manage the mainframe operations for units of **TRW, Inc. Affiliated Computer Services, Inc.** in Dallas last week inked a pact worth up to $50 million to provide mainframe computing services to **TRW Space & Electronics Group** in Redondo Beach, Calif. The space equipment and electronics manufacturer's in-house information systems group will focus on client/server systems development at **SHL Systemhouse, Inc.** signed its deal with **TRW Steering Systems Ltd.** in London. TRW's in-house IS will oversee the manufacturer's migration to Unix-based systems.

Big databases, little start-up

Five executives from **American Express Corp.** subsidiary **Epsilon Data Management, Inc.** have formed a third company to help big marketers and financial institutions manage databases larger than 100G bytes on parallel processing systems. **Tessera Enterprise Systems, Inc.** in Wakefield, Mass., can set up a marketing data warehouse for its customers in about eight weeks for $100,000 or less, according to Tim Hult, former Epsilon chief operating officer. Continuing implementation and integration services should cost between $500,000 and $2 million.

Printing standards promised

Vendors striving to make printers more manageable across networks will announce a milestone this week: the definition of a standard set of commands and status objects accessible via the Simple Network Management Protocol. The set, approved by the **Internet Engineering Task Force**, matches one approved in March by the **Desktop Management Task Force** for access via the Desktop Management Interface. Available this fall, programs that use this information will help users and network managers route print jobs to the appropriate printer and deal with problems.



SMART hard drives save data

Five leading disk drive makers have agreed to support new specifications that will enable systems manufacturers to warn users if a disk drive is in danger of losing stored data. The Self-Monitoring Analysis and Reporting Technology (SMART) was pioneered by **Compaq Computer Corp.** It will be adopted by **Conner Peripherals, Inc., Western Digital Corp., IBM**'s Storage Systems Division, **Seagate Technology, Inc.** and **Quantum Corp.**

Novell to add NetWare, NT support

Novell, Inc. this week will announce plans to add support for its NetWare and Microsoft Corp.'s Windows NT to its Tuxedo transaction processing monitor, which currently runs on various Unix systems. The NetWare and NT ports will start beta-testing in June and July, respectively, and both should ship in the fourth quarter, Novell said. The company also will preview an upcoming Tuxedo System 6 release that adds an Open Software Foundation Motif-based graphical user interface for managing Tuxedo applications from X Window System terminals and PCs with Unix emulators.

SHORT TAKES **IBM** is combining its RS/6000 workstation and server division and its SP2 parallel processor operation under Irving Wladawsky-Berger, who was in charge of the SP2 unit. William Filip, the RS/6000 general manager, will take a leave of absence in the fall and retire next year because of "personal family reasons," IBM said.... The **U.S. Department of Defense**'s Information Systems Agency has chosen **Computer Associates International, Inc.**'s CA-Unicenter to manage the processing at its 16 mega data centers. In addition, **MCI Communications Corp.** has decided to standardize on CA-Unicenter to manage its enterprise client/server environment.... **Servio Corp.** in San Jose, Calif., and **Versant Object Technology Corp.** in Menlo Park, Calif., plan to upgrade their object-oriented database early next month.... **Hewlett-Packard Co.** and **Microsoft** last week announced plans to cooperate on development, marketing and support of high-performance servers, networks and management products based on Microsoft's Windows NT Server.

The Newspaper of Information Systems Management
March 13,1995, Vol. 29, No.11, 170 Pages, $6/Copy, $48/Year

COMPUTERWORLD

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WinSock API update eases accessibility

Tool allows Windows apps to access the Internet and Unix networks

By Patrick Dryden

In a move that could change the face of client/server computing, a group of vendors will release an expanded specification this week for a Windows application programming interface (API) that promises to ease communication across any kind of network.

The WinSock 2 API is a major overhaul of a tool that enabled Windows-based PCs to access Unix servers across corporate networks and the Internet. The first version helped PC programs connect to network services via IP sockets. Sockets are the pairing of an IP address and a port; they enable direct access across a network instead of relying on a network operating system to redirect local requests for access to a remote server.

"This API will let PCs exploit a much wider variety of networks and become much easier and more natural communication tools," said Dave Andersen, a senior engineer at Intel Architecture Labs.

Corporate and commercial developers can download the complete WinSock 2 API specification this week. Intel Corp. and Microsoft Corp. are creating free tools for release during the fourth quarter and for later inclusion in the Win32 software developer's kit. Vendors in the Windows Sockets Group said they expect products that use the new API to ship in the first quarter of 1996.

Reach out and search

Examples of WinSock-compliant programs include the wildly popular browsers for graphically navigating the World-Wide Web of hypertext servers and TCP/IP client applications that support electronic mail or 3270 emulation.

Now these applications will have a way to reach out across new types of networks, search more directory services and establish the quality of service available for desired transactions.

After helping design a global TCP/IP network linking some 60,000 devices, Blair Sanders said he doesn't care much about WinSock 2 support for other protocols. But the senior technical staff member for network architecture at Texas Instruments, Inc., the Dallas-based semiconductor manufacturer, said he likes the promises of 32-bit performance for new Windows versions and negotiated delivery.

Negotiated delivery is an application's ability to check out the underlying network transport available to it and adjust options and operation to guarantee the right level of service.

"The first version of WinSock was a major help because we could run compliant applications on anyone's TCP/IP client," Sanders said. "Now, client programs we acquire or write ourselves run on Windows Sockets. I look forward to higher performance and the ability to set quality of service for future applications."

Users eager for more network-aware applications for the Windows platform will see the number jump, according to Phil Rosenzweig, engineering director for PC networking at Suosoft, Inc.

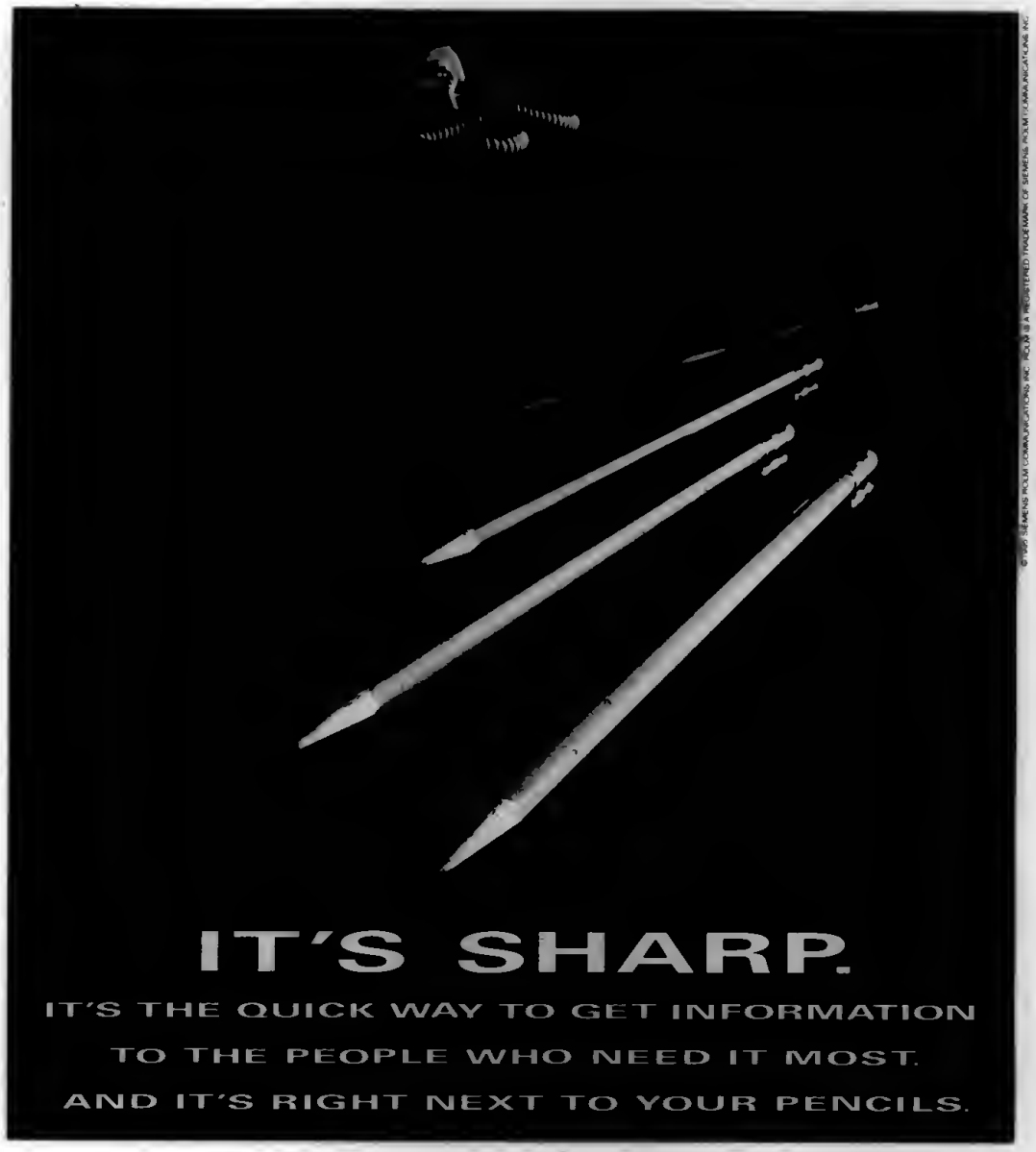
"Even though IP networks are taking over the world, this API separates an application from the underlying transport so that it can still work efficiently across the IPX, DECnet and other networks that won't go away any time soon," Rosenzweig said.

The new specification supports those traditional LAN stacks and other transport methods, such as the following:

- Multimedia-capable Asynchronous Transfer Mode and Integrated Services Digital Network transports.
- LAN and WAN wireless links.
- Telephony networks.



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Sun pushes Solaris switch

Targets key accounts to move users off older software

By Jean S. Bozman
SAN FRANCISCO

Pushing to meet the year-end arrival of its new UltraSPARC systems, Sun Microsystems, Inc. has quietly launched a project to make sure its very largest customers have moved to the Solaris 2.x Unix operating system by 1996.

Called the Key Customer Program, Sun's effort to ensure migration at its top 30 to 100 accounts is related to the upcoming release of 64-bit UltraSPARC systems — the first Sun machines that will not run the older SunOS. It is funded until July, sources said.

Sun executives confirmed last week that the UltraSPARC systems require the as-yet-unannounced Solaris 2.5 operating system but can support older Solaris and SunOS applications via backward-compatible code.



CEO Scott McNealy *wants to move Sun's top 100 customers to Solaris 2.x by 1996*

To prepare the way for UltraSPARC, Sun is offering to assist large accounts that still have lots of older SunOS systems. Among the resources in play: migration planning and support for porting and tuning applications; high-level visits with customer chief executive and chief information officers; and even lobbying independent software vendors to port their SunOS applications to Solaris 2.x.

Weighing the move

One high-profile account still on SunOS is Chase Manhattan Bank NA, which recently purchased 540 Sun workstations for its trading operations in New York. The bank is waiting for software vendors to port key applications.

"What this says to me is that the bump I've got to get over to get there [to Solaris 2.x] is diminishing," said Bill Schimoler, a Chase vice president and manager of the bank's global LAN services.

The lack of enough third-party applications and the time-consuming nature of the migration have kept many shops from moving, according to more than a dozen users attending last week's SunWorld '95 show here. "If you have an environment that is not growing and is stable, what's the motivation to move?" asked one user from a large commercial firm.

Still, some large user sites have converted recently, and confidently, on their own. Mark Haag, a systems programmer at United Parcel Service, Inc.'s airline division in Louisville, Ky., said three people on his 30-person computer team spent six months moving from SunOS 4.1.3 to Solaris 2.3. The move affected more than 80 systems, including three servers.

"The benefit is the consistency with all the other [Sun] environments we have," Haag said last week, noting that UPS has 120 airline maintenance sites worldwide running Suo systems. Most of the migration time was spent evaluating and testing Solaris 2.3, the Interleaf, Inc. document-handling applications ported to it and the chip upgrades on workstations.

Sun is also working to shake the 3-year-old image that moving to Sun's Solaris 2.x is too painful. Company executives told analysts earlier this year that about half of Sun's 1.3 million installed machines still run SunOS.

Calling the experts

For the souped-up migration program, Sun is tapping its software and hardware engineers, its service and support group and internal consultants, said David Polkinhorne. As director of product support services at Sun Microsystems Computer Corp., he is leading the user assistance program.

"We don't think that customers have to move every single machine to Solaris 2," Polkinhorne said. "They need to be able to integrate the two environments together." SunOS applications support special networking software that has to be changed, users said.

While helping its largest accounts, Sun hopes to discover logistical and technical problems and then resolve them. "If we get the top 100 customers over, all the third-party applications will be over, by definition," said CEO Scott McNealy.

"It hasn't been as traumatic as people make it seem," said Marcos Mondragon, a systems administrator at Citadel Investment Group in Chicago.

As Sun goes for new markets, users want assurances. See page 48.

Solaris OpenStep stumbles on next step

SunSoft, Inc. stunned users attending the Solaris Developer and Networking Conference by announcing that its OpenStep for Solaris release will not ship until spring 1996.

A beta-test copy, code-named Crescendo, will ship this fall, but executives had promised at last year's Solaris conference to ship OpenStep on Solaris this spring.

Sun's OpenStep object-oriented development environment — built on top of Next Computer, Inc.'s NextStep — will not be announced until ObjectWorld in San Francisco this August, Sun said. SunSoft President Jon Kannegaard said Sun removed the Mach microkernel in the NextStep framework, but it took more time than expected to replace it with homegrown software from Sun's experimental Spring operating system.

Sun also announced that its new Netra I 2.0 Internet servers are priced from $6,000 to $15,500 and will ship in June. Its SunScreen security servers for the Internet, priced from $50,000 to $100,000, are shipping now, with volume shipments set for fall.

—Jean S. Bozman

Notebooks plug into Pentium

By Michael Fitzgerald

The Mobile Pentium show opens tomorrow, but notebook buyers may want to wait to buy a ticket until later this year.

Tomorrow is when Intel Corp. announces the mobile version of its 60/90-MHz Pentium chip, which will feature Voltage Reduction Technology that lets it run at 3.3V externally and 2.9V internally, reducing the chip's power draw by up to 30% and limiting its hit on battery life.

A horde of vendors will introduce machines based on the chip, but many of those products will not be fully redesigned systems. Users will still get faster performance, but few notebooks will use the Pentium-optimized Peripheral Component Interconnect (PCI) graphics local bus, analysts said.

No mobile-oriented PCI chip sets are shipping now. Of the products to be announced tomorrow, only Hewlett-Packard Co.'s OmniBook 5000 will combine the new chip with PCI. HP will use Opti, Inc.'s Viper PCI chip set and will not ship the product in volume until August.

Perhaps a bigger issue for users is notebook pricing, which may not drop as much as was expected earlier this year [CW, Feb. 6]. Intel intends to push Pentium pricing as low as possible, but pricing on screens, the most expensive part of a notebook, may not fall much in the second half of this year.

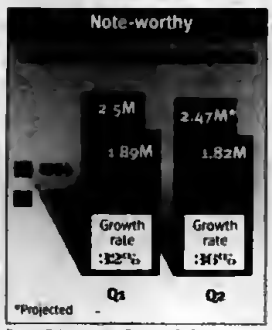
> Pentium started slowly in the notebook market, selling 49,000 units in the first quarter of this year according to Dataquest.

Pricing depends on Korea's Samsung Group, which will enter the screen market early in the second half. Samsung is the only screen maker that is not Japanese, and thus it is not directly affected by the fall of the dollar against the yen. If it can produce screens in volume, it could force prices down.

"If I'm an MIS director and I can delay my [laptop] purchase until the fourth quarter, that's probably a good idea," said Kimball Brown, an analyst at Dataquest, Inc. in San Jose, Calif. He said Samsung's market impact will not manifest itself until later in the year.

In the meantime, vendors are introducing low-cost versions of notebooks based on Intel's first mobile Pentium chip, which debuted late last year. The 50/75-MHz Pentium was Intel's first to use Tape Carrier Packaging, a thinner packaging for the processor that reduces the amount of space the chip takes up on the motherboard.

The 75-MHz Pentium will become Intel's mainstream notebook processor, and prices are dropping accordingly. The average price of a 75-MHz notebook is $4,800, according to market research firm International Data Corp. But Dell Computer Corp. will introduce a 75-MHz system for $2,999, and AST Research, Inc.'s model will start at $3,499.



Source: Dataquest, Inc., San Jose, Calif.

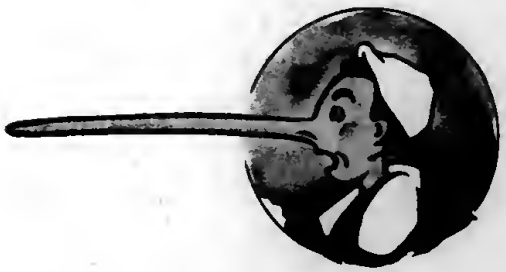
The potential price drops are good for users such as John Chapman, lead information architect at Amoco Corp. in Chicago. Amoco is evaluating what its users want in a notebook and said it expects to decide what to buy toward the end of the year, when Pentium notebooks should be a high-volume part of the market.

"If [Intel] drives the price of their chip down and [vendors] do enough with the new Pentium, that'll be to everyone's advantage," Chapman said.

Pentium notebooks due to be announced from large vendors tomorrow include the following:

- Toshiba America Information Systems, Inc.'s Portege T610CT, a 4.6-pound subnotebook with full-motion video and sound capabilities and a 9½-in. display. It will cost $4,649.
- AST's Ascentia 950N, which has the 75-MHz Pentium and a hard drive of up to 1.2G bytes at prices from $3,499 to $5,499.
- Dell's Latitude XPI, which costs $3,999 for a 90-MHz Pentium model and $2,999 for a 75-MHz Pentium model.

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Compaq sets sights on mainframe servers

Four-server clusters to feature Intel's next-generation P6

By Jaikumar Vijayan
HOUSTON

Compaq Computer Corp. is readying an alternative mainframe platform that will feature an array of linked servers based on Intel Corp.'s next-generation P6 chip.

The platform, to be formally announced next year, will initially consist of a "cluster" of four quad-processor P6 servers connected through a fiber-optic channel link. They will support both Unix and Microsoft Corp.'s Windows NT operating systems.

The plan to introduce clustered servers is part of an ambitious effort by Compaq to capture high-end Unix server and low-end mainframe application markets using PC-based technologies.

This is not Compaq's first bid for the hearts — and wallets — of traditional large systems shops that buy from vendors such as IBM, Digital Equipment Corp. and Hewlett-Packard Co. But, analysts said, this time Compaq should be taken more seriously.

From prey to predator

With some of the traditional performance barriers between intel chips and RISC-based processors beginning to fade, "Compaq is taking advantage of the Intel engine and moving up the server food chain," said Jim Garden, an analyst at WorkGroup Technologies, Inc. in Hampton, N.H.

"The biggest issue is, if [Compaq] builds it, will they come? The answer is, a great amount of work needs to be done on the software front first. There is a different class of software problems associated with very large files," that Compaq has had no previous experience with.
— Dave Andrews, partner, D. H. Andrews Group, Inc., Chesire, Conn.

"There is definitely going to be a learning curve ... but they have earned their stripes" in the client/server market, Garden said.

By taking high-end servers and tying them together, Compaq claims users will be able to scale up system performance by adding more processors or more servers to the cluster. Clustered PC servers running software such as Oracle Corp.'s Parallel Server Option, for instance, can be used to build large network databases.

Compaq is getting ready to team up with a global partner to provide worldwide service and support to large accounts and multinational corporations. It expects to announce a global service partner by the end of the quarter.

Compaq claims that its four-server clusters will be capable of performing an estimated 3,500 transactions per second, in comparison, the company's fastest ProLiant server today scales up to an estimated 650 transactions per second. Each Compaq cluster will be able to support up to 8G bytes of memory and a whopping 8T bytes of hard disk space, according to the company.

Such clustered server implementations will provide an "extremely high degree of fault tolerance [and] tremendous backup and storage capabilities," said Gary Stimac, a senior vice president of Compaq's systems division.

Future cluster implementations could include eight-way servers based on P6 processors, according to Stimac.

Meanwhile, the company is preparing a third-quarter announcement of a server recovery capability that basically allows two servers, running in parallel, to monitor and mirror each other's data. If the primary server fails or has to be taken down for maintenance, processing will switch over to the parallel server.

Voracious CA gobbles up Legent

CONTINUED FROM COVER 1

Dzubeck said. CA offers comparable data file transfer capabilities with its CA-Unicenter systems management package.

As of press time, CA and Legent officials were unable to be reached for comment.

According to a press release issued last week, a wholly owned subsidiary of CA will offer to buy all outstanding shares of Legent's common stock at $47.96 per share.

Still, a few people said they are worried about the dwindling number of players in the mainframe software market (see chart).

"We're concerned. Any time competition is reduced in a market, you have to wonder what effect it's going to have on your prices," said Tom Hovey, director of technical support at Allstate Insurance Co. in Northbrook, Ill. That company uses CA-1, CA-7 and Legent's Automate products, among others.

IBM still on top

That may not be a contentious issue. As several analysts pointed out, IBM's mainframe software business is several times larger than that of a combined CA and Legent. Furthermore, Sterling Software, Inc., BMC Software, Inc. and other players will continue to balance the mainframe software landscape, analysts said.

"I think IBM will keep [CA] honest [on mainframe software pricing], given how IBM has been roping in its mainframe software prices over the past couple of years," said Gary Graham, coordinator of data management at The Home Oil Co. Ltd. in Calgary, Alberta.

Nevertheless, the acquisition could go a long way toward helping CA to solidify its nascent position in the distributed systems management market. For the past two years, Legent has focused on an architecture called Extended Processing Environment (XPE) as a way to tie together its hodgepodge of products.

CA could benefit from XPE, analysts said. CA-Unicenter does not manage operating systems or network components, but the object-oriented tools in XPE would allow Unicenter to do so, said Bobby Cameron, director of the software strategies service at Forrester Research, Inc. in Cambridge, Mass.

Users hopeful

Randy Richardson, senior vice president of technology and logistics at Ann Taylor Stores Corp. in New York, said he is excited about CA's plans to take over Legent. He said Legent has done little to upgrade the Imlink communications software Ann Taylor uses to provide data communications between its 270 U.S. outlets and headquarters.

Yet the pending acquisition sounded a hollow note with Peter Falzarano, an automation engineer at the Medical Center of Delaware in Newark. He raised the question of whether CA products would now take precedence over Legent's systems management products. "Do I have to rip [our Legent products] out? Are they going to say, 'Here's Unicenter, have fun'?" Falzarano asked.

"We've invested a lot of time and energy in Legent products. We're hoping our prior efforts were not all for nothing," he added. "We're very concerned and confused, and we have no idea what direction Computer Associates is going to take with their automation plans."

Major mergers and acquisitions

Computer Associates	Legent
1987	
Uccel	
1988	
Applied Data Research	
1989	
Cullinet Software	Marina Associates and Duquesne Systems, Inc. (merged to form Legent)
	Business Software Technology
1990	
On-Line Software International	
1992	
Pansophic Systems	Goal Systems International
Nantucket	Spectrum Concepts
1994	
	CMA Software
	Corporate Microsystems
	Networx, Inc.
	Performance Technology, Inc.
	TeamOne Systems, Inc.
	National Dataguard Technologies
1995	
The Ask Group	
Computer Associates acquires Legent	

Merger justice

Analysts and lawyers said last week that it is not clear whether CA's proposed acquisition of Legent will face antitrust hurdles at the U.S. Department of Justice or the Federal Trade Commission, the agencies that oversee corporate acquisitions.

"The Justice Department will ... review the transaction and ask whether the concentration in the mainframe system market is beyond acceptable levels," said Paul Hilal, senior associate at Broadview Associates LP, a Fort Lee, N.J., investment bank.

Detailed work

Defining an "acceptable level" is often a complex task that involves looking at the market shares of the merging companies, the number and size of competitors, the degree to which the companies' product lines overlap and the ease of entry by other competitors into the market.

"It's hard to second-guess the Department of Justice right now, but there is plenty of activity in the systems management market, which is fairly robust," said Chet Geschickter, a vice president at Hurwitz Consulting Group, Inc. in Newton, Mass.

"I don't think you can build an argument that CA is cornering the mainframe systems market since IBM and other numerous players are there. But there are politics involved, and that produces an element of unpredictability," Geschickter added.

—Gary H. Anthes and Thomas Hoffman

Massive price drop gives Rdb users a break

By Neal Weinberg

Six months after Digital Equipment Corp. sold its Rdb database software to Oracle Corp., the vendors have teamed up to offer users a 90% discount on Rdb site license upgrades.

With this deal, the companies hope to stop customers from grumbling about Rdb pricing. Like virtually every other database player, Oracle prices Rdb component by component. Before the sale of Rdb, Digital essentially offered a free runtime version of Rdb with the purchase of VAX hardware and sold the development version plus support in a hardware package.

The fine print

WHO'S ELIGIBLE?
Digital users who upgrade from VAX to VAX, VAX to Alpha, Alpha to Alpha.

OTHER CRITERIA?
Users must have an Oracle Rdb support contract.

HOW MUCH IS THE DISCOUNT?
90% of list price for Oracle Rdb.

HOW LONG DOES THE OFFER LAST?
Through 1995.

WHAT IS THE MINIMUM CHARGE?
$5,000.

WHAT HAPPENS AFTER THE OFFER EXPIRES? *Users pay list price minus credit for software already owned.*

With Digital's bundled pricing scheme, users did not really know how much they were paying for Rdb. Under the discount offer, users who upgrade their Digital hardware will pay 10% of the list price of Oracle Rdb, which costs from $199 per seat for the low-end Oracle Workgroup Server to several hundred thousand dollars for an enterprise-level version.

Many Digital users said they were studying the offer and generally viewed it favorably.

Scott Bittler, supervisor of computer technology engineering at Corning, Inc.'s telecommunications division in Wilmington, N.C., said he plans to upgrade some of his VAXs to Alphas and was interested in the discount.

"We will be buying new licenses," Bittler said. "We are a growing business, and we're not intending to jump ship from Rdb. It has served us well, and we don't regret the choice, even with 20/20 hindsight."

There is one catch: To be eligible for the discount, users must also have an Oracle support contract, which costs more than the Digital version did. "I don't like the fact of having to pay more for maintenance agreements, but that was to be expected," Bittler said.

Tim Hewitt, principal computer-integrated manufacturing engineer at National Semiconductor in South Portland, Maine, said the discount offer sounds intriguing. He added that Oracle's support costs do not seem out of line based on what he had anticipated.

Digital is contributing financially to the discount program even though it no longer owns Rdb because software upgrade costs were creating a barrier to new hardware sales, according to Sandy Zimany, Digital's marketing manager of database marketing development.

In fact, before this new pricing was unveiled, it was possible for an Rdb license to cost more than the Alpha machine it runs on, Zimany said. For example, a $1,000-per-seat license with 50 users would cost $50,000, which is more than many Alpha servers cost.

Terry Shannon, an analyst at Illuminata in Nolbs, N.H., said the discount is aimed at easing the "rough transition" some Digital users are having. "People used to Digital's steerage-class pricing were not used to the pricing model from Oracle," he said.

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AlliedSignal

CONTINUED FROM COVER 1

ment product, called TQ Soft Lite. In essence, the aerospace giant is becoming a value-added reseller to its massive user base of 87,000 employees.

AlliedSignal's software will automate the company's total quality management process by tracking the activities of several thousand autonomous project teams spread over three divisions and 43 countries.

AlliedSignal, Inc.



Headquarters: Morristown, N.J.
Employees worldwide: 87,000
1994 revenue: $12.8 billion
Revenue by division:
- **Aerospace:** $4.6 billion
- **Automotive:** $5 billion
- **Engineered materials:** $3.2 billion

Approximate number of PCs companywide: 30,000

AlliedSignal has also tightly integrated the quality management software into Microsoft Corp.'s Office suite, which is the companywide desktop standard.

"We wanted to integrate TQ Soft as a fifth or sixth sibling of Microsoft Office," said Eric Singleton, the unit's IS director and TQ Soft program manager. "We're not reinventing a project management tool, a spreadsheet tool or any of the tools already integrated into Office."

The total cost of development was well under $1 million. And that is peanuts for an application that will be rolled out to 30,000 PCs and eventually used by all 87,000 employees of parent AlliedSignal in Morristown, N.J.

The idea is to eliminate redundancies among teams and create a central repository of team-generated solutions that can be reused across the $12 billion global manufacturing colossus.

The idea of instant access to information about hundreds of teams and their activities contrasts sharply with current practices. Tracking teams is now largely a manual process, and where databases do exist, access is limited, said Nancy Klein, a senior quality manager.

Delivering the TQ Soft system as shrink-wrapped software is a first for AlliedSignal, which wants users to regard the custom system as just another business productivity tool.

In fact, on users' screens, the TQ Soft icon will appear next to already familiar icons for Microsoft's Excel, Project and other Office applications.

TQ Soft ties directly into several Microsoft productivity applications to provide an integrated total quality management system.

The shrink-wrapped approach also enables IS to deliver enhanced versions of the software without starting from scratch, which is the way Microsoft and other commercial software companies develop and deliver products.

"If you use a version approach, you have a much more robust product that can be maintained across the enterprise," Singleton said.

The success of the group's new approach can be attributed in part to a set of development techniques from Microsoft Consulting Services called the Microsoft Solutions Framework. That methodology, which the vendor's consulting unit sells as a commercial product, focuses on techniques that Microsoft uses to deploy commercial software.

"The role we played [at AlliedSignal] was a program management role," said Andrew Moss, director of strategic technology at Microsoft's consulting unit. "We want people to take advantage of the power already on their desktops."

It took a six-person team slightly less than seven weeks to develop and write TQ Soft Lite. The team completed its work earlier this month. It spent five of those weeks hammering out functional requirements and specifications.

"The cost-savings benefit is on training and support. This is so integrated with Microsoft [Office] that we don't think there is going to be much incremental training at all. You can't afford to give people a month's training before they're proficient in a function."

— Paul Hoedeman, chief information officer, AlliedSignal Aerospace

The actual coding — all of which will be reused in an enhanced version of the package, called TQ Soft Pro, which is slated for a November rollout — took a pair of developers less than two weeks to finish using Microsoft's Visual Basic.

"We had the basic design in our minds, so we had no hesitation in going to the full-blown system," said Harinder Nanda, one of the two developers who wrote the TQ Soft code.

Keeping it simple

Moreover, because the quality process that the software was designed to automate was "very much driven from the top down, we didn't end up with a lot of strife between user groups arguing about what they wanted," said Rafael Luna, development manager of TQ Soft. Instead, the team consulted with only three quality managers who represented users.

Lee Capristo, an AlliedSignal business process analyst who participated in the design, said, "TQ Soft has all of the tools that we've learned to use in our [total quality management] classes, [and] if you can do it right on the computer, I think it's going to be a quantum step forward in getting people to actually use the tools."

TQ Soft Lite will enable the tracking of quality goals and tasks across the company with great precision, helping users identify how their jobs relate to the firm's mission and goals.

The enhanced version, TQ Soft Pro, will add the ability to quickly assemble project teams based on team members' skills sets, a frequent requirement in the aerospace industry. Currently, those skills sets are stored in databases maintained by the firm's human resources organizations.

Both versions of TQ Soft use Microsoft's SQL Server running on Windows NT Server to store data for multiple groups and divisions. Replication of databases across the firm will be handled by SQL Server 6.0, which is scheduled to ship in June.

TQ Soft Pro will store the electronic documents created for all TQ projects within AlliedSignal. It will also be fully integrated with the firm's GTE Information Systems image and document management system as well as with Notes.

Initially, TQ Soft is being compiled for the current 16-bit Windows operating system. It will be recompiled for 32-bit Windows 95 when AlliedSignal deploys it. "We'll be staged and one of the first applications to go" to Windows 95, Singleton said.



The TQ Soft team *spent its first five weeks defining the functional requirements of TQ Soft Lite. The team included: (from left) Norm Lindenberg, Dan Budliner, Harinder Nanda, Eric Singleton (on table) Alan Marlatt and Rafael Luna*

The mostly thirtysomething, multicultural dream team of developers who worked on TQ Soft designed and developed the first version of the company's first shrink-wrapped enterprise application in just under seven weeks.

Ownership and accountability were the team's twin mantras. Each team member had exclusive responsibility for at least one of the quality management application's subsystems. The team was one of the first groups of IS professionals to train in Microsoft Consulting Services' Solutions Framework software development methodology, which has been commercially available for about a year.

Heading upstream

To create its TQ Soft package for total quality management, AlliedSignal's IS group first needed a tool to help it specify and document the project.

But the internally developed tool — dubbed SWIM, or Software Integration and Management — is finding a larger destiny as it heads upstream to aid in other development projects.

SWIM provides developers with ready-to-use templates based on the Microsoft Solutions Framework guidelines. Team member Harinder Nanda wrote SWIM using Microsoft's Access 2.0 database.

"We're rolling out this [development] process throughout IS," said Eric Singleton, IS director at AlliedSignal Technical Services Corp. and manager of the TQ Soft program. "SWIM allows us to roll that discipline out quickly to multiple locations."

By filling out the various templates, the developers document each stage of a program's life cycle. These steps range from the original project vision and scope statement to functional specifications, design and implementation, testing, quality assurance and, finally, production.

By choosing any of the categories from a menu, SWIM invokes Microsoft Word and loads the appropriate template onto the developer's screen, ready to be filled in.

"This not only gives the developers a place to start but also provides a standard for how our documents should be done for all of our projects," said Rafael Luna, TQ Soft development manager.

Like TQ Soft, SWIM also supports links to other Microsoft Office applications.

—Stuart J. Johnston

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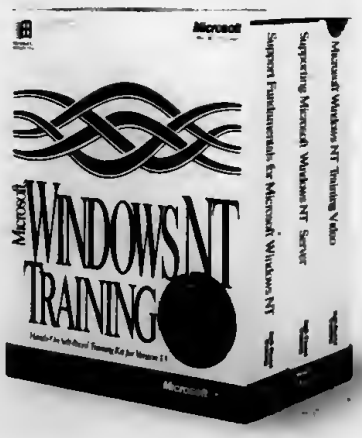
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Computer Systems

CD Net Plus cuts storage costs, licensing fees

By Tim Ouellette

By making its client/server CD-ROM networking software native to Windows, Meridian Data, Inc. hopes to move CD-ROM into the mainstream for business storage.

The Scotts Valley, Calif., company this week will announce CD Net Plus 6.0, a revamped version of its CD Net client software. It lets users access and manage CD-ROM data housed in servers and jukeboxes across Novell, Inc. networks.

According to users, sharing CD-ROM data with software such as CD Net Plus 6.0 reduces licensing fees for the data, decreases storage space and cost, and lets them centrally maintain and control the data.

Previously, CD-ROM access over a network was handled through DOS, which chewed up memory (see chart). However, as a native Windows application, CD Net Plus 6.0 lets users work in Windows without taking up any DOS memory.

"That is probably the most important feature of their software," said Jaime Perez, an administrator and associate faculty member at the University of Texas Medical Branch in Galveston.

Meridian also said it has successfully tackled one Windows shortcoming — a limitation on accessing one CD-ROM drive for each drive letter on a system.

With only 26 drive letters available in Windows — divided among local hard drives, network drives and CD-ROM drives — "the drive letter limitation had become a problem; it was getting a little cramped," said Robert Burrell, network administrator at a health care product manufacturer in New Jersey.

Basic benefits

Meridian Data's CD Net Plus 6.0 provides more CD-ROM drive access while saving workstation memory

Before CD Net Plus 6.0

Limit of one CD-ROM drive for each drive letter on the system.

All CD-ROM access handled through DOS, requiring terminate and stay resident (TSR) program taking up 40K bytes of DOS memory.

With CD Net Plus 6.0

Simultaneous view of all CD-ROM storage from one drive letter.

No TSR programs or Microsoft extensions (for local drives) required.

Includes three user and three administrator applications.

To address this, a virtual grouping feature in CD Net Plus 6.0 requires only one drive letter to access all CD-ROM resources, including CD-ROM drives at the workstation.

Before, users on Burrell's network could not access full reference databases or applications that spanned many drives. "Now we can use them all at once," he said.

Burrell has 26 CD-ROM servers accessible to all users, so he no longer has to spend money on outside sources to search huge databases because all the information can be maintained in-house.

Though limited with previous versions of Meridian's client software, reseller Accudata Systems now provides a petroleum information application that requires simultaneous access to 24 separate CD-ROMs, said Jason Knight, a senior network analyst at the Houston company.

The software comes with user applications to access mounted CD-ROMs, browse drives and manage CD-ROM database configurations. Administrator applications are available for installing local or network drives, creating user menu items and controlling access to servers and drives.

CD Net Plus 6.0 costs $895 for a 10-user concurrent license.

Imagine trying to predict the impact of PC application software in 1975. It would have been nearly impossible to foresee the full power of word processing and spreadsheet programs that are now so ingrained in contemporary work culture.

Twenty years later, we are on the threshold of another revolution in computing technology. It's called "Groupware."

Until recently, computer technology has mainly served to automate transaction-based, back-office applications or to improve personal productivity. Tools to manage the rich variety of document-oriented information — which is the lifeblood of most business processes — simply didn't exist. The limitations of technology stifled teamwork rather than encouraging it. Groupware resolves these dilemmas.

So, what is groupware? Groupware is software that uniquely enables organizations to communicate, to collaborate, and to coordinate key business processes. Groupware encompasses electronic mail, but goes far beyond messaging to act as an integrated platform for the development and deployment of a new class of client/server applications — applications that structure the flow of both structured and unstructured information in business relationships — among teams, across an enterprise, and between companies.

Groupware is so compelling because it allows businesses to create an organizational memory and share knowledge and expertise across time zones, geographies, and networks. It draws together the collective-intelligence found in unstructured information sources like word processing documents, electronic mail messages, and faxes. Companies using groupware find that the barriers to high-performance teamwork that have plagued them fall away. According to International Data Corporation, groupware signals the second wave in desktop computing.

At the same time, this emerging software category has become a source of confusion. Technology buyers sometimes mistake a component of



groupware for the whole. Corporations are making enormous investments in messaging technology, unaware of the additional benefits of an integrated messaging and groupware infrastructure.

Groupware must combine three essential elements to be viable:

A reliable, scalable and secure distributed document database. The database-centric model gives users the ability to assemble, share, and manage the rich variety of documents vital to conducting business — business plans, contracts, orders, product information, calendars and to-do lists, multimedia presentations, faxes, scanned images and video clips.

An integrated messaging system. Groupware users must be able to take advantage of a messaging infrastructure to send and receive electronic mail and move documents through a workflow process.

A rich application development environment. Developers must be able to rapidly build portable and scalable strategic applications which span document-oriented and structured database information.

Applications designed with these components can deliver mission-critical, enterprise-wide results like slashing product development cycles, enhancing relationships with customers, and automating a sales organization for greater productivity.

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In the coming months, we will use this forum to explore the issues around groupware. Our goal is to ensure that you make successful investments in this important product category.

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1 Lotus Notes: Agent of Change. International Data Corporation, 1994. 2. Ibid.

How Frito-Lay Handles the Decision Making CRUNCH



Doritos® and Tostitos brand Tortilla Chips, Lay's® and Ruffles® brand Potato Chips, and Rold Gold brand Pretzels

It's hard to imagine any company that understands consumer tastes better than Frito-Lay, a leader in the U.S. salty snack category with annual revenues of more than $5 billion. Yet Frito-Lay is determined to get even closer to its 400,000 retail customers.

In fact, a decentralization effort begun in 1990 has, in the last five years, brought a renewed sense of ownership and empowerment to the 30,000 Frito-Lay employees. As part of this ownership, Frito-Lay's Information/Technology Systems department (I/TS) has created a tactical, market-driven decision support system—the Zone Workbench System—designed to get timely information in the hands of front-line managers.

It's an application built from the customer up, and the SAS® System of software has been there every step of the way.

"The Zone Manager is the first line of communication with our Route Sales force," says Tom Nealon, Director of I/TS for Frito-Lay, whose department spearheaded development of the decision support system. "We knew from the start that the Zone Workbench had to provide information that was 'actionable'. It also had to be portable across client/server, workstation, or laptop environments. Equally important was the ability to integrate multiple data sources."

Delivering More than Software Alone

"Given the tight schedule, the software company we chose had to provide superior applications development tools—as well as comprehensive training, consulting services, and documentation," adds Nealon. "SAS Institute came through on every count, proving time and again the value of having a software vendor that's as interested as we are in completing projects on time and on target."

Nealon calls the Zone Workbench "a tremendously versatile business tool proving user-friendliness, power, and portability between platforms can all operate in one package. The old-style EIS systems are antiques. The game today is to provide information that can impact the marketplace each day, for each of our customers. For Frito-Lay, SAS Institute is making sure we have the tools to make an impact."

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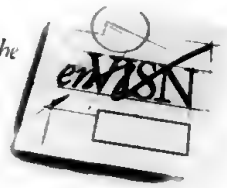


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Clustering to boost NT Server horsepower

Digital, AT&T to deliver minicomputer-like capabilities

By Stuart J. Johnston

■ The glass ceiling that has kept Microsoft Corp.'s Windows NT confined to lower levels of the enterprise may soon crack a bit when the system gains a crucial minicomputer operating system feature — clustering.

Digital Equipment Corp. and AT&T Global Information Solutions both said recently they are less than a year away from delivering clustering capabilities for NT. This development cheers users who said NT runs out of horsepower in some high-demand situations.

Both vendors will provide the clustering capabilities as an add-on to the Windows NT Server. Clustering will enable several machines — either single- or multiple-processor machines or a mixture of both — to function as a single computer. This does not mean that either vendor or Microsoft is abandoning support for machines with multiple processors. Rather, it is seen as a way to group multiple-processor machines, enabling customers to construct systems capable of handling enterprise-wide computing tasks currently handled by minicomputers and mainframes.

"That would be awesome," said Jim Martin, information manager at the sales agency group at Pacific Bell in Anaheim, Calif. His group maintains a statewide system running Microsoft SQL Server databases on 10 to 12 NT Servers. Three primary servers handle the bulk of the load, and where and when the heaviest demand will fall can be extremely unpredictable.

"It seems like every day we have a single machine slowing way down because it takes all the load," Martin said.

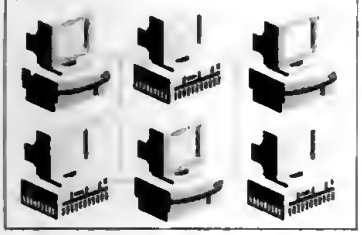
Planning for the vagaries of system demand often revolves around the issue of how well a particular machine and its operating system "scale," or expand to meet increasing demand.

Scalability can be provided in two ways: A single computer can be set up to hold several microprocessors working as a close-knit unit in a scheme called symmetrical multiprocessing (SMP), or several machines can be clustered together to work as a single, larger computer.

NT Server currently runs on some SMP machines with as many as eight processors, said Mike Nash, group product manager for NT Server.

All together now

A group of single- or multiple-processor machines are "clustered" together, sharing workload and disk space as if they were a single computer with multiple processors



Too much

Microsoft and AT&T GIS are working on a project to expand NT's SMP support through 16 processors, said Martin Sinnott, AT&T GIS' director of Windows NT marketing in Dayton, Ohio.

However, many observers agree that NT Server's penetration into higher-end enterprise computing niches has been stalled by its inability to scale past eight processors.

"NT scalability just poops out on bigger [SMP] machines," said Colin Carpi, president of Chartwell Advisory Services, Inc. in Penn Valley, Pa., which is developing a national financial services network. While Carpi said NT probably scales fine on up to eight processors, he added that he sees clustering as a way to get more for less money.

Clustering, an alternative approach originally developed by minicomputer vendors to allow them to provide mainframe-class capabilities using less-expensive minicomputers, lets machines share workloads when one machine becomes overloaded. They also share storage and other peripherals transparently and can often automatically switch over to a different machine if one machine in the cluster fails or becomes overloaded.

"If you have a bunch of smaller machines, you have more flexibility, plus it's much less expensive," Carpi said.

Martin agreed.

"We always have to buy each machine based on a worst-case [scenario]. We'd probably be able to buy a little more uniformly, and we'd probably end up getting overall better response," he said.

AT&T GIS will begin beta testing its clustering technology in the third quarter of this year, with final delivery scheduled by the end of the year, Sinnott said. That product, called LifeKeeper for Windows NT, will work with Intel Corp.-based boxes.

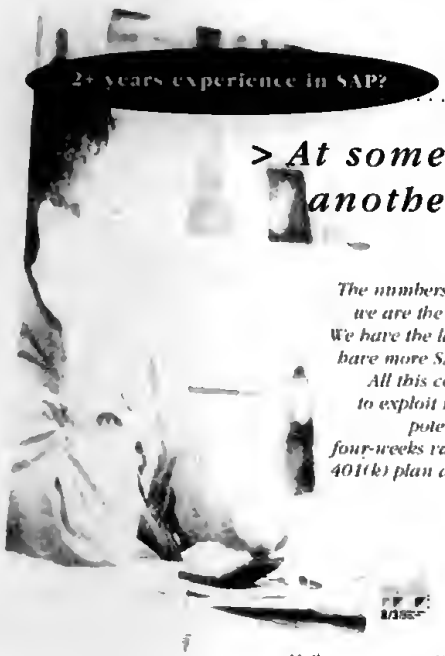
Meanwhile, Digital's clustering product, which will support Intel boxes as well as its own proprietary Alpha AXP RISC machines, will enter beta testing this fall. Delivery is set for the first quarter of next year, said Scott Davis, Windows NT cluster engineering manager.

Digital's clustering product, which it expects to sell itself and also through OEMs, supports single-processor and SMP machines, said Carole Greenfield, NT clustering business manager.

On deck

Tandem Computers, Inc. has pledged to begin shipping fault-tolerant SMP systems based on Mips Technologies, Inc. R4400 RISC processor. It will also offer clustering for those systems within two years, according to company officials.

Windows NT gains as a Web server. See page 53.



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The Web vs. Notes vs. Microsoft Exchange

World-Wide Web emerges as a viable Notes alternative for some users plan for dual environments

By Ellis Booker

With 20,000 seats, Andersen Consulting is one of the largest Notes shops in the world. So why did the consultancy choose the World-Wide Web as the training platform for Eagle, its object-oriented development environment?

"Even though we're a global Notes user, we didn't want to force our clients to have to go to this platform," said Richard Costolo, a software architect at Andersen's home office in Chicago.

About 50 of Andersen's worldwide personnel have been through the training, which uses free Web server code and licensed Web browser clients from Netscape Communications Corp. in Mountain View, Calif. Eventually, Eagle customers will be able to access the hypermedia training via the Internet.

"The power of the Web is it is so extensible," Costolo said. For instance, Costolo's team wrote a four-line C program that automatically invokes a Smalltalk session when a student with a Netscape browser clicks on one part of the on-line training manual.

Like several other large Notes shops, including US West, Inc., Price Waterhouse and Entergy Corp., Andersen uses both Notes and the Web simultaneously.

Other users are curious about making the two platforms work together but are busy just getting a corporate foothold on the Internet.

"We have 2,000 to 3,000 Notes users, and we're aware of the potential of [connecting] it to the Web," said Trav Waltrip, vice president of telecommunications at Travelers Insurance Co. in Hartford, Conn. Waltrip said he is concentrating on getting Travelers' home page up within the next few months.

HTTP servers and HTML browsers give Lotus' Notes a wake-up call

HTTP servers and HTML browsers

Strengths	Weaknesses
Intuitive hypertext often means zero training	Immature application development, authoring and application interface tools
Widely available low-cost or no-cost browsers. Free and commercialized servers available.	Lingering security questions
Both browsers and clients support numerous platforms	Easy to get lost in poorly designed hypertext systems

Lotus' Notes

Strengths	Weaknesses
Large developer and value-added reseller community	Fledgling multimedia support
One vendor means one supported environment	High cost, especially server component
Version control of documents	Requires end-user training
Rich development environment	

One for all

Some Web zealots believe that Lotus Development Corp.'s groupware product can be replaced with Hypertext Transport Protocol (HTTP) servers and Hypertext Markup Language (HTML) client browsers, the widely available and free "DNA" of the Web.

They maintain that Notes is too complex and expensive and praise the simplicity of hypertext. In one shop, the Web-based training system was simple: Training on how to use the training is not allowed.

Still, most users and analysts say the two platforms serve different needs.

"Notes is for work teams; it works very well for this and is worth the money," said Richard Kesner, chief information officer at Babson College in Wellesley, Mass., which is just now building an external home page.

Different uses

Kesner, like several other users, said Notes is best at work team applications and that the Web may be preferable as a simple way to disseminate information to a broad population, especially one that may not be using Notes.

"The Web provides a way to access people you don't know exist. Notes is for ongoing relationships," said Todd Hunter, president of WorkFlow Designs, Inc., a Lotus reseller and groupware consultancy in Dallas.

Jerry Michalski, managing editor at "Release 1.0," a newsletter in New York, agreed. For the time being, Notes has version control, document coordination and security that few Web servers can match, he said.

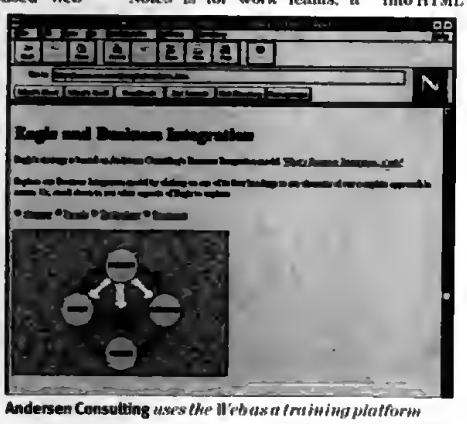
David Marshak, an analyst at Patricia Seybold Group in Boston, said there is a more complicated relationship between the two platforms. "In some ways they compete; in some ways they are synergistic," he said.

Paul Haverstock, director of software development at Lotus in Cambridge, Mass., contended that "once you get past a certain threshold in the amount of information published or its complexity, things bog down [with Web-based] systems."

Lotus has stepped up to the Web challenge with two products. On May 1, it began shipping InterNotes Web Publisher, a Notes server-task application that automatically translates Notes documents into HTML pages for Web publication. Server-based pricing on InterNotes is $6,589.

Release 4 of Notes, due by the end of the year, will enable the Notes Server to act as a Web browser and deliver down to Notes clients.

Andersen developed the Eagle training in just two months at a cost of $3,000. It used a freeware image map editor and HTTP software and bought licensed versions of its Netscape browser.



Andersen Consulting *uses the Web as a training platform*

group wafe

Long hyped as products that would kill each other, Lotus Development Corp.'s Notes and Microsoft Corp.'s Exchange Server platforms seem destined for a more mundane coexistence.

Several users in mixed electronic-mail environments said recently that they are hesitant to put all their eggs in either the Notes 4.0 or the Exchange 1.0 basket. Rather, they are choosing to use both products when they become available — Exchange as a messaging platform and Notes for collaborative computing.

Such coexistence will be not be easy, yet it remains a real possibility — especially for those looking at migrating from Microsoft's Mail to Exchange and using Notes on the high end, said David Marshak, vice president of Patricia Seybold Group in Boston.

Marshak will be publishing a report next month titled, "Lotus Notes vs. Microsoft Exchange."

He predicts that serious issues will erupt when "one part of the organization builds Notes-based applications, and the other builds Exchange-based applications, and they then try to share information across [platforms]."

"That's when things will get tricky," Marshak said. Administrators will have to support both sets of applications while also making sure that they communicate. But even in these environments, Notes is always the collaborative computing environment and Exchange is the messaging platform of choice, he said.

The Microsoft monolith

"There certainly are many people who have an apocalyptic sense that Microsoft will eventually deliver all of the functionality of Notes. The big question is what constitutes 'eventually.' Is it Exchange, Cairo or something in the next millennium?" Marshak added. "For all the customers waiting to see if Microsoft can deliver the Notes killer, there are many more who are happy that they didn't believe Microsoft when it said it would be able to beat Notes by 1992 or 1993 and went ahead and built strategic applications on Notes."

In a nutshell

Lotus' Notes

- Database orientation
- Application development capabilities
- Third-party support
- Strong replication

Microsoft's Exchange Server

- Messaging orientation
- Simple administration
- Open APIs
- OLE support

"We will likely see both platforms at Chevron," said Marion Weiler, senior E-mail technologist at Chevron Information Technology Co. in San Ramon, Calif. "If that's the case, we'll look at how they gateway and interact with each other. It won't be easy."

Chevron has more than 14,000 Mail users and about 3,000 Notes users, with no mail exchange between environments. Weiler said he views Notes as a robust application development environment with third-party support and Exchange as a natural upgrade from Mail with a bulletin board, threading and some application development.

"From an overall standpoint, it will be better to have one. But the reality is that the large base of Notes will be hard to deinstall and migrate to Exchange," Weiler said.

"We will see coexistence for awhile," said Mike DeLeon, project manager at CNA Insurance Co. in Chicago, who is evaluating messaging platforms. "Notes meets a different need. We can do messaging with it, but currently it is not as good."

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Reliability

Briefs

Novell posts gain

Propelled by strong NetWare 4.1 sales, **Novell, Inc.** posted nearly $96 million in profit in its second quarter compared with $66 million in the same quarter last year. Revenue rose to almost $530 million compared with the $454 million in sales the company reported in its second quarter last year. Bob Frankenberg, Novell's chairman and chief executive officer, said, "NetWare 4 now accounts for 33% of total NetWare sales."

Start-up wins backing

Olivetti USA-backed start-up **Advanced Telecommunications Modules Ltd.** (ATML) in Cambridge, England, has received $11.25 million in investments from a syndicate of international investors led by Oak Investment Partners. ATML recently unveiled a range of networking products designed to make it affordable to bring Asynchronous Transfer Mode (ATM) communications to desktop PCs.

Sematech profitable

Semtech Corp. in Newbury Park, Calif., reported $9.3 million in sales and a profit of $1.1 million for its first quarter, ended April 30. Sales increased 65% over the $5.6 million reported for the same period last year. Quarterly profit increased 625%.

SHORT TAKES Robert LaBant, former senior vice president and general manager of **IBM** North America, has joined the board of **Starware, Inc.**... Terry McGowan has been named president and CEO of **Action Technologies, Inc.** in Alameda, Calif.... **Landmark Graphics Corp.** in Houston has agreed to buy **GeoGraphix, Inc.** in Denver.... **InfoNow** in Boulder, Colo., has merged with **Cimarron International** in Aurora, Colo.... **Seagate Technology, Inc.** has taken a "substantial" minority stake in **CVC Holdings, Inc.**

Merger to corner Smalltalk market

ParcPlace, Digitalk plan Unix/PC line

By Elizabeth Heichler

Merger plans announced last week between the top vendors of Smalltalk tools are expected to spawn a product line that spans both desktop clients and back-end servers and leads the market in share.

The merger will join two complementary product lines: ParcPlace Systems, Inc. in Sunnyvale, Calif., offers tools that run across a range of Unix server platforms, while Digitalk, Inc. in Santa Ana, Calif., targets desktop PC environments.

While the combined product line will benefit users in the long run, Steve McClure, an analyst at International Data Corp. (IDC) in Framingham, Mass., cautioned that the process of integrating the tools will not be easy.

The strong professional services offerings of Digitalk should benefit customers of ParcPlace, said Hugh Bishop, an analyst at Aberdeen Group in Boston. "One of the real constraints in this market is people skills," he said.

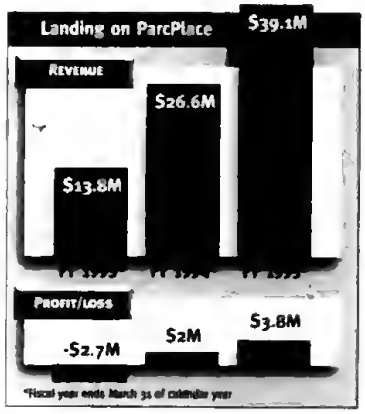
Smalltalk is an object-oriented programming language that is gaining popularity in corporate information system departments that are developing client/server systems, particularly information access applications, according to a recent IDC study (see story, page 73).

Users pleased

One ParcPlace customer who said he is pleased with the proposed merger is John McGehee at Texas Instruments, Inc.'s semiconductor group in Plano, Texas. McGehee, a TI fellow, said he is looking forward to the eventual integration of the two product lines, adding that it should make deploying applications developed in a Unix environment easier on manufacturing shop floors dominated by PCs.

The merged entity, ParcPlace-Digitalk, Inc., is expected to hold the lion's share — 66% of Smalltalk revenue — of a market in which IBM will be relegated to a distant second place, according to IDC.

Revenue for both companies totaled $55 million for the year ended March 31, 1995. According to IDC, ParcPlace leads the Smalltalk market in license revenue, while Digitalk holds the top spot in unit sales of the Smalltalk language and tools.



Leading the new company as president and chief executive officer will be Bill Lyons, who currently holds those positions at ParcPlace.

"There's a window of opportunity in the Smalltalk market as customers are going from mainframes to client/server and objects," Lyons said. "It's becoming increasingly clear that IBM will be formidable competition, and while [ParcPlace and Digitalk are] both technology leaders, the merger will give us mass, broaden our product lines and build momentum for objects."

The merger, which must win stockholder approval, will involve a transaction valued at about $48 million. Publicly traded ParcPlace will issue 3.8 million shares of its common stock and options in exchange for all the stock and options of privately held Digitalk.

Two Unisys execs resign over services strategy

By Neal Weinberg

Top-level defections at Unisys Corp.'s most important business unit have raised concerns about the company's efforts to transform itself from an old-line hardware maker to a hip, professional services provider.

James R. Corey and Edward J. Sanderson, co-presidents of the Information Services and Systems Group, the company's largest and fastest growing division, recently resigned after only three months on the job.

They had replaced Victor Millar, who was credited with building the services business into a $2 billion enterprise. Millar left in February.

Steve Carns, executive vice president of the Information Services and Systems Group, will lead the division until a replacement is found.

The official statement from Unisys said Corey and Sanderson left because they could not make the long-term commitment the company was seeking.



CEO James Unruh *'s decision to rein in the professional services group caused James Corey and Edward Sanderson to resign, analysts say.*

What drove all three from the Blue Bell, Pa., company was Chief Executive Officer James Unruh's insistence on reining in the professional services group, which had been operating virtually as a freestanding business unit, according to Mark Hodges, vice president of G2 Research, Inc., a consultancy in Mountain View, Calif.

Christine Ferrusi Ross, an analyst at Dataquest, Inc. in Westboro, Mass., added that Corey and Sanderson wanted to be "more autonomous than Unruh was willing to let them be."

During the two-year start-up period, Millar "pretty much had free rein," Hodges said. But once the operation was up and running, Unruh decided it was time to integrate information services into the company's overall structure.

"Now all of a sudden, the information services group had to be more participatory with the general manager" in a particular geographic area, Hodges said.

Ross said that has created something of a culture clash between the hard-charging, independent people Millar brought in and other Unisys employees.

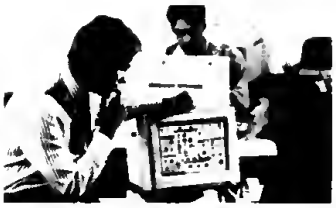
Calm before the storm

In February, Millar left to head the professional services organization at AT&T Corp. During Corey and Sanderson's three-month reign, the two "relived all the battles Victor fought with the general managers," battles that Hodges described as operational and tactical.

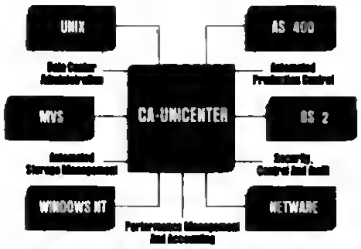
But Hodges said Unruh is ultimately making the right move in trying to put together integrated, multidisciplinary teams that can offer a range of services and solutions, both from the consulting and technology sides of the business.

Dave Crull, Unisys' technical services support manager at Blue Cross/Blue Shield of North Dakota in Fargo, said the loss of Corey and Sanderson is not an immediate concern.

"But if they start having wholesale defections in management, then I might have some cause for concern," he said.



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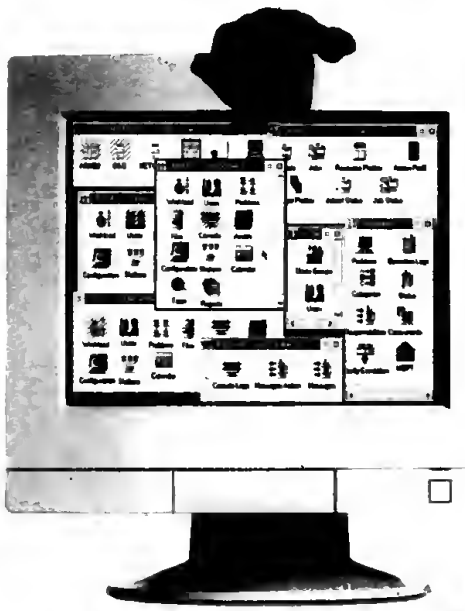
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It was a very good day. Nobody yelled at you.

Someone asked your opinion on a business problem, and you had the time to answer. An end user thanked you. You tinkered with a new software package. Only one server went down. You took a spin on the Infobahn. The CEO came back from camp, hit you with some buzzwords, and you told him you already had those things implemented. All in all, it's pretty amazing what good systems management software can do for your day. And at Legent, we've put together the most extensive set of industrial-strength, distributed systems management tools available. Thanks to our XPE™ strategy, our software can work together across almost anything you can wire together, too. Regardless of function or platform, from PC LANs to UNIX servers to mainframes. Which means you can manage everything from the platform of your choice, something our customers say is definitely making their lives easier. Who knows where all of this could lead? You might actually start whistling in the hallway. Or at least wanting to.

Small change

A consultant I know was so sure his client's PC spending was out of control that he bet the client $100 that he didn't know how many PCs were in his division.

The client told him there were 275 desktops and portables. In fact, there were more than 400. A precise number couldn't be determined because machines were buzzing in and out of the department faster than they could be counted.

Given that PCs and associated software, networking and training account for about half of IS spending, law and order in the acquisition process has yielded to chaos, if not anarchy.

Even the surveys can't agree on just who is in charge of the buying process. Last month, a survey found that spending was shifting away from centralized IS and toward user departments, particularly for small-systems spending [CW, April 17]. This month, two different surveys showed that IS acquisition at eight of 10 U.S. corporations remains under the aegis of central IS [CW, May 22].



So who's in charge? And does it matter?

Darn right it matters, at least to any company for which cost containment is an issue. Are there any companies where cost control is not an issue, you might ask? Probably not. But there are plenty of companies that have loosened the acquisition reins, allowing them to be "shared" between user departments and IS. These, no doubt, are the companies that can't put a number on their installed base.

Gartner Group last year dived into the murky waters of hidden spending in the client/server environment. What Gartner found is that one-third or more of purchases are essentially hidden. The corporation does indeed pay for the hidden purchases, but the money isn't accounted for as IS spending, so the true cost of client/server is distorted.

I predict that as purchase orders for memory upgrades, software upgrades, CD drives, Internet connections, RAM upgrades, bandwidth expansions and accelerator boards pile up, more and more chief financial officers will take that stroll down memory lane to see just how big the installed base really is.

Such an accounting might help the nontechnical executives understand why the company has two or more incompatible mail systems; why Internet junkies can spend so much time glued to their tubes doing nothing productive; or why people still use "Sneakernet" despite miles of LAN cabling in the ceiling.

Thus, as the bean counters undertake this much-needed accounting task, the need for far greater control of this runaway acquisition train will become as obvious as the columns in their balance sheets. Some end users will grouse and hoist the banner of individual empowerment in the corporation.

But they don't pay the bills.

Bill Laberis

Bill Laberis, *Editor in chief*
Internet: *blaberis@cw.com*



Potential failure

The real question about Windows 95 is not whether it can fail; it is whether the promised potential will ever become actual ["Big win for Win 95," CW, May 1]

The extra cost associated with technology failure is related to government costs that can't be contained and the wave of white-collar layoffs. It is ironic that right next to the editorial is a letter headlined "Consumers lose in Microsoft battle." In saying that what's good for Microsoft is good for the U.S., the writer seems to base his argument on the low price of software. But the price of software is a trivial issue; the failure to improve productivity is the critical issue.

The dollar now resides in the 80-yen range. Before the PC-buying binge of the '80s, it was 200 yen per dollar. The currency markets are saying, "America can't cut it." I don't need to bash Microsoft, but I'm afraid that the impending rush to buy Windows 95 fills me with pessimism. The only thing that should drive that product's success is if it makes us do more valuable work in less time. But no technology produces that. If you plant in barren soil, it produces money only for the vendor of the seeds.

Jim Mork
Minneapolis

Visual Basic runs second to Delphi

"Delphi gives Visual Basic a run for its money" [CW, May 1] portrayed what is one of the most exciting and useful products to come along in a long time in an inaccurate and unfavorable light.

It seemed almost as though you were being paid to trash this program, which surpasses Visual Basic in every way imaginable and sets a new standard for programming languages.

Your statement that Delphi will "at least live alongside Visual Basic as a control development tool" reveals your ignorance. Visual Basic cannot create any controls — Visual Basic Custom Controls, Dynamic Link Libraries or otherwise. Only Delphi and other true languages can do that.

Robert Camp
Walnut Creek, Calif.

Logical strain

Yet another computational malady ["Voice strain plagues some PC users," CW, April 24]. This is unbelievable.

I can't believe this was printed in *Computerworld*. Haven't these people ever heard of telephones? Was there a cry of "voice strain plagues some telephone users" when the phone was invented?

I would suggest that the true problem is CCWS: Chronic Complaining and Whining Syndrome.

Joe Johnstone
Wilson, N.C.

Patterns pending

The proven patterns of success Paul Strassmann is looking for in "Virtual outsourcing" [CW, May 15] can be found in the "ad-hocracies" operating in industries as diverse as consulting, filmmaking and agile manufacturing.

In the world of plug-and-play professionals, an issue more pressing than the cooperation and integration trade-offs raised by Strassmann is the harshness of market discipline. In an environment characterized by performance-based remuneration, market forces will polarize the less-equipped within the sanctuaries of large organizations while attracting the talented to the high-risk, high-return virtual market. Just look at college campuses, where the best and brightest increasingly shun corporate jobs in favor of the high-intensity meritocracies — consulting companies.

Given the U.S. Department of Labor projections reported in the same issue, organizations will have no choice but to look to external resources to supplement a dwindling and arguably lower-quality internal labor pool. Under such a scenario, organizations will need to create a two-pronged resourcing strategy that first attracts and retains key internal resources by matching the rewards of the virtual marketplace and then leverages plug-in resources with virtual infrastructure and outcome-based performance contracts.

David Moloney
Cambridge, Mass.

■ Computerworld welcomes comments from its readers. Letters should not exceed 200 words and should be addressed to Bill Laberis, Editor in Chief, Computerworld, P.O. Box 9171, 375 Cochituate Road, Framingham, Mass. 01701. Fax number: (508) 875-8931; Internet: letters@cw.com. Please include an address and phone number for verification.

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Step carefully, then go for the gusto

Frank Monteleone

Business process re-engineering has been sold as the cure for whatever ails your company, department, government or other socioeconomic institution. It's now coming under criticism because studies show that a majority of re-engineering projects are not succeeding. Curious. That's like going to the racetrack, betting on long shots and getting mad because they don't win most of the time. That's what high risk is about, isn't it?

There is still a lot of re-engineering (or whatever new tag is put on it) to do, and IS organizations must be critical participants.

Despite what many consulting firms may tell you, business process re-engineering is not an exact discipline that can be reduced to a copyrighted methodology. Although there is a lot of "make it up as you go" in these efforts, you do need some sort of framework to guide you as you reinvent the structure of work in your company. To that end, I offer these principles to re-engineer by (with apologies to S. Covey).

■ Begin with an end in sight. Have some specific targets and outcomes you seek to attain. Remember, if you don't know where you're going, any cow path you pave will get you there. At least half of these goals should be quantifiable. There is only so much visionary stuff one can do, such as "become a world-class customer-focused, market-responsive organization," that your management will put up with before demanding to see the numbers or throwing you out on your ear.

■ Seek to understand how this process got so messed up in the first place. This is sometimes called current state evaluation. What you are evaluating is how many stupid things are going on in the process. And why on earth anyone would care if you stopped doing these stupid things.



Business process re-engineering is not an exact discipline that can be reduced to a copyrighted methodology.

■ Put things behind you. Enough already with the multicolored process maps of how bad things are. Get on with designing what the process should be. Too many efforts die here of analysis/paralysis.

■ Think win. Go for the gusto. Try for major change. Make the beau geste. Re-engineering isn't about seeking modest improvements. It's high risk, high reward. You have to think like Monty Python (and now, for something completely different) to break the old paradigms.

■ Be pro-technoid. Don't be afraid to let information technology lead the way. It's the reason most of this re-engineering stuff is possible now. We in IS shouldn't hide our light under our propeller hats. You can't be a beacon if your light doesn't shine. Use information technology in new and uncommon ways to design and implement better processes. Then tell the world.

■ Sharpen the Ginzu. Be prepared to cut out lots of stuff along the way. Some cuts may be painful.

■ Energize. Evangelize, exaggerate, overstate, make bad jokes, but keep a high energy level. You will need it to convert the many disbelieving scribes and pharisees along the way.

Monteleone is an information technology director at Packaging Corp. of America in Evanston, Ill. He can be reached at FMM@NT or mail.com.

Business events: The key to application integration

Patricia Seybold

I detected a startlingly simple pattern when listening to leading-edge users at my company's Technology Forum last month. They have discovered an efficient and effective way to tie together disparate legacy applications in a real-time fabric of interoperating applications. Their firms use business events as their organizing principle.

What is a business event, you ask? One way to think from a business modeling standpoint is that it is a business object whose state has just changed.



The time is clearly ripe for business events and a publish-and-subscribe approach to application integration.

At Merck & Co., typical events include purchase order created, requisition approved, inventory moved, batch approved and lot released. At Sun Microsystems, typical events are sales order approved, credit checked, shipment packed, shipment shipped and so on. You get the idea.

In using business events for application integration, the first step is to model your business and capture the relevant business events. This does not have to be a complete, top-down, galactic enterprise model, according to Ian Miller, executive director of Automation and Information Technology at Merck. Instead, Miller favors the "create the event model as you go" approach.

He advises you to look for the transactions or state changes that any of the applications you are integrating need from another. You can use a variety of modeling tools to do this first step, anything from an entity/attribute model to a workflow tool, to an object-oriented analysis and design tool. The trick is to focus on the business events.

Once you determine what events each application needs to publish and what events each applications needs to subscribe to, you are halfway there.

The next step is to wrap the application events in a common API and use some form of middleware to ensure delivery of the events from application to application in the right sequence.

At Merck, Miller's team developed a homegrown API and used a transaction switch combined with message queuing middleware.

At Sun, Karsten Riemer, systems architect for the object systems development group, used message-oriented middleware with a persistent object store for the events in transit.

At the Department of Metropolitan Services for King County, Washington, Betty Hopper, information resources manager, uses message-oriented middleware with a graphical workflow interface that enables programmers to specify business event-routing among applications used to manage Seattle's bus and sewer systems, using a point-and-click interface.

One of the great side benefits to this approach of integrating applications using business events is that you wind up creating an information warehouse of real-time business information as a by-product of hooking your applications together.

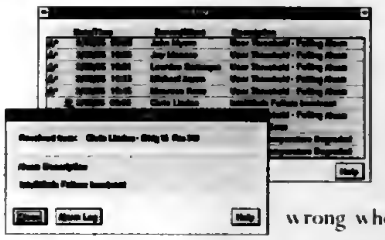
Miller refers to this as the "smrak up from behind" approach to building a data warehouse. "We tried building an intergalactic information repository and got tangled up in our underwear," Miller said. Using this approach, Merck is able to gradually broaden the scope of its information warehouse as the company tackles more and more application integration projects. What's more, the decision-support information now available to end users is much more dynamic and reflects the actual state of the business.

The time is clearly ripe for business events and a publish-and-subscribe approach to application integration.

Seybold is president of Patricia Seybold Group in Boston. Her Notes address is Patricia Seybold/SEYBOLD or NOTES/NET. Her Internet address is pseybold@psgroup.com.


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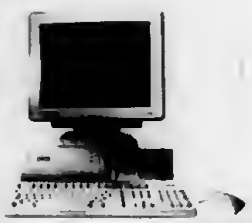
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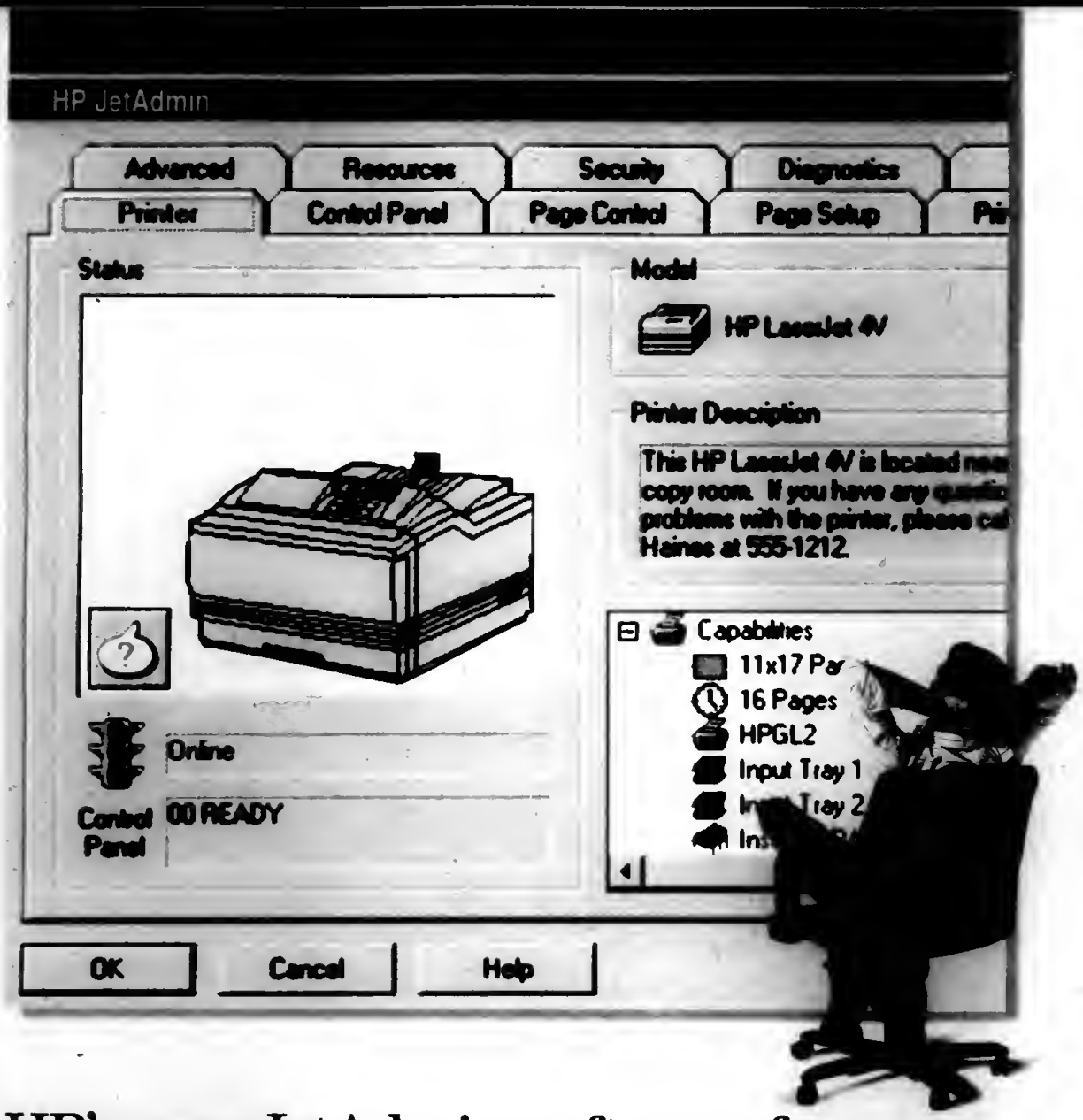
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Antivirus utilities hold strong

Windows 95 means some utilities will need to be revamped, others become superfluous

By Stuart J. Johnston

As the August ship date for Microsoft Corp.'s Windows 95 approaches, users of utility programs may be wondering, "Will there be life after Windows 95?"

The answer appears to be yes, at least for antivirus utilities. However, life may not be so rosy for vendors of disk compression and memory management utilities.

Microsoft's "everything-but-the-kitchen-sink" approach to bundling its operating systems with a slew of utilities has gathered even more steam with Windows 95 (see story below).



Closer Look
Windows 95 utilities

Room to grow

Yet Windows 95 still leaves room for enhancements, according to users and analysts.

"I think there may even be more of a market because a lot of the utilities we've come to depend on don't work anymore" with 32-bit Windows 95, said Greg Scott, information services manager in the college of business at Oregon State University in Corvallis.

For example, existing disk utilities will not work under Windows 95 because of changes to the file system, including the addition of support for long file names, Scott said.

There will also be a need for tools that help users maneuver around problems caused by the introduction of a new operating system, according to one industry observer.

"Given that Windows 95 will ship with a number of still operational bugs, I think there will be a healthy market" for utilities, said Dwight Davis, editor of the industry newsletter "Windows Watcher" in Redmond, Wash.

One utility niche that Microsoft has decided to cede to third-party vendors is computer virus protection.

While MS-DOS comes with an antivirus utility, that capability has been omitted from Windows 95 partly because antivirus utilities must constantly be updated to cover new viruses.

"Microsoft's position is they didn't really feel that antivirus was an effective [utility to bundle with the operating system] because you had to update it all the time," said Brian Moura, assistant city manager for San Carlos, Calif.

In fact, new viruses are being introduced at a rate of 100 to 200 a month, according to industry observers.

Virus protection

"My guess is that even some of the more innocuous viruses could be real damaging" to the new file system because it has to track additional information such as long file names, said Don Barker, associate professor of information sciences at Gonzaga University in Spokane, Wash. Barker is responsible for about 85 PCs in the university's business school.

Santa Clara, Calif.-based McAfee Associates, Inc., a leading vendor of antivirus software, plans to ship a Windows 95-specific antivirus tool within 30 to 60 days of when Windows 95 ships. It will be able to detect and remove more than 3,000 viruses, said Rick Kreysar, vice president of marketing.

"We definitely are in the market for a Windows 95-based 32-bit antivirus product," said Jim Lisiak, senior software engineer at Chevron Technology Services Co. in San Ramon, Calif.

Lisiak said he would consider McAfee's offering in addition to an upcoming version of Norton Antivirus from Symantec Corp. in Cupertino, Calif.

Norton Utilities

However, users have mixed views when it comes to other utilities.

Moura raved about Symantec's Norton Utilities for Windows 95, which he is beta testing.

"We were working on a machine, and [a memory resident utility in the Norton package] gave us an alarm telling us we had an illegal long file name. The file name got mangled so [the utility] fixed it, and we were back on the air," Moura said.

Norton Utilities will provide many standard utilities such as tools to perform various disk maintenance tasks. It will also provide enhanced functions such as the ability to "tune up" a PC, performing tasks such as checking the hard disk's integrity and consolidating files on the drive prior to installing Windows 95. This helps assure that users will have fewer problems, according to a Symantec spokeswoman.

But that does not convince Lisiak, who prefers to keep systems as generic as possible. "I've probably got 195 machines running Windows 95 now [without using add-on utilities]. The question is, how much do you really gain?" he asked.

Scott, who is responsible for about 300 PCs, gave a thumbs-down to hard disk compression utilities. "Disks are so cheap today that I think that anyone who messes around with compression needs to have their head examined," Scott said.

Utilities: Is there life after Windows 95?

Users and analysts say there will definitely be a market for some categories of utilities even after the release of Windows 95, but there is broad disagreement over which categories will be successful

Safe	In doubt
Antivirus	Disk compression
File backup and restore	Memory managers
Systems diagnostics	Replacement user interfaces



Defining utilities

Utilities are auxiliary software products that enable users to fine-tune their system's memory, handle secondary tasks such as backing up and restoring files, compressing files and entire hard disks, locating files and ferreting out computer viruses.

Windows 95 packs utilities

When Windows 95 ships at the end of August, it will combine DOS and Windows into a single package that also includes a new user interface and 32-bit, pre-emptive multitasking capabilities.

Windows 95 will also come with new versions of most of the utilities that Microsoft already bundles with MS-DOS.

The inclusion of these basic versions of popular utilities will mean that many users need not spend extra money to buy add-on utility packages. The utilities will include disk and file management utilities, file backup and restore capabilities, memory management and systems optimization tools and disk compression.

Additionally, Microsoft recently announced it will also ship an add-on package called the Plus Pack for Windows 95, which will provide additional utilities. This will include a so-called "intelligent agent" that will let users perform important tasks such as disk defragmentation or file compression either at prescheduled times or after the user has let the PC sit idle for a set period of time.

Also included in the Plus Pack will be a World-Wide Web browser for the Internet and utilities to enable users to compress individual files.

—Stuart J. Johnston

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EEBWW 4/95

Vendors drive on-line support

Novell, Microsoft agree to joint support pact

By William Brandel and Laura DiDio

Users who are perennially caught in the cross fire of vendor finger-pointing will be happy about a new joint support pact between two of the most influential desktop software vendors — Novell, Inc. and Microsoft Corp.

The two companies have agreed to take an on-line tack to solving user support complaints and mutually support each other's products.

Specifically, the firms said they will jointly author technical documentation, co-sponsor support forums and cross-train each other's support engineers.

This action has the potential to affect the bulk of user sites. Novell currently commands more than two-thirds of the installed base of LAN operating systems, while Microsoft is virtually uncontested in the desktop operating system market, according to most analysts. In addition, the move underscores recent initiatives by various PC developers to lower support costs for themselves and their customers.

Analysts said vendors are pushing on-line support to cut costs (see story at right) and to respond to users' demands. Currently, 17% of users access support electronically, according to Dataquest, Inc. The San Jose, Calif.-based market researcher predicts that more than 25% of users will garner support from on-line sources by the end of 1997.

This low-cost — and in some cases, free — support is a godsend for financially-strapped sites such as the state of California's Department of Toxic Substances Control in Sacramento. The site lives on freebies to support its 800 PCs, said Mark Shahan, network administrator at the department.



"This department is broke," Shahan said. "We're like a Third World nation. If it's not free, we don't do it."

In a separate action, Novell announced it is expanding the NetWire on-line forum for NetWare users into an on-line service support center that will encompass its networking and desktop products. It will now offer an array of on-line services for its products ranging from WordPerfect for Windows to NetWare 4.1. Novell on CompuServe and the World-Wide Web. While the forum previously offered limited on-line support and software patches, it functioned mostly as a marketing information base for Novell.

This suits users such as Josh Turiel, director of information Services at Adlife Marketing and Communications, Inc. in Norwood, Mass., just fine.

On-line services

Turiel said his firm makes frequent — but not exclusive — use of on-line support services. He said "on-line support is useful and handy, especially during off-hours or if I don't want to spend 45 minutes waiting in a bold queue."

The service from Novell is based on providing users with accessibility and the context to solve problems themselves. For example, each of the company's 15 product groups will include a Top 20 list of frequently asked questions for users to access. Also, Novell said it will put the information its telephone support technicians use on-line.

Novell's efforts spearhead similar moves undertaken recently by other vendors. Lotus Development Corp. announced its own Web-based service last month. Microsoft also offers on-line services on CompuServe but is expected to roll out a beefed up on-line support service when it delivers its Microsoft Network, which is currently in beta testing.

Rising costs

Vendors are turning to electronic support because it is cheaper, said Kurt Johnson, an analyst at International Data Corp., a Framingham, Mass.-based consultancy.

Indeed, the cost of support — rising in the face of declining software margins — has become a millstone around developers' necks. Now, support technicians represent the single largest block of employees at Novell. One quarter, or 2,000, of Novell's 8,000 employees are dedicated to support. Lotus' support staff comprises 20% of its total staff.

However, support ratios are expected to decline as vendors try to trim costs across the board, hence the need to find cheaper ways to furnish support, analysts said. Lotus, for instance, is attempting to cut $50 million to $70 million in expenses after posting a loss in its first quarter. — *William Brandel and Laura DiDio*

Microsoft reshapes Select volume licensing program

By William Brandel

In an effort to match ease of use for customers with a steady revenue stream for itself, Microsoft Corp. has launched a revamped version of its Select volume licensing program.

Unlike the two-tiered Select 2.1, the new program, Select 3.0, offers a three-tiered licensing model that gives users expanded flexibility in their efforts to strike a volume licensing agreement with Microsoft. A new "Open" tier, which does not require a contract, was also added to the program (see box).

Volume licensing programs such as Select or Lotus Development Corp.'s Passport are popular because they save users money. Users are able to strike a deal with their vendor under which they pay less than if they bought their software on a shrink-wrapped, piecemeal basis. However, Microsoft is trying to close the loophole on license "floating" practices with Select.

Ambiguity in licensing terms has enabled multinational companies with concurrent use license options to buy one set of software licenses for one time zone and then float these licenses by making them available to users in another time zone after the original site ends business for the day. Concurrent use means users only have to buy a set number of licenses that can be used by any combination of users, providing they do not exceed the purchased license total.

Microsoft has included language in Select 3.0 that prohibits concurrent license floating across international time lines in its program. And, in effect, the company is ending this practice with its Select 2.1 users by fading the program out after two years.

Microsoft has drawn a line in the sand regarding how far users can go in terms of taking advantage of concurrency with its program, analysts said. At the same time, vendors have made it easier for users to choose programs that will help them administer software license use.



Concurrent fever

Between 70% to 80% of large corporations are using concurrent licensing programs at their sites.

Projected savings

"This new program is very fair for the customer and for the vendor," said Chris Germann, an analyst in the Software Asset Management Group at Gartner Group, Inc., a consultancy in Stamford, Conn. Germann said that even though in some cases users will be paying twice as much as they do now for their concurrency agreements, users will save both money and time over the long haul.

The program also offers more flexibility in how users track their software license usage. For example, until now, Select users have had to meter their software use and report it to their software reseller on a monthly basis. Now, customers can arrange to report to their reseller on a quarterly basis.

Select 3.0 also allows users to buy upgrades as part of their volume agreement. Previously, only new software purchases could be included as part of the volume discount.

"I don't know if it will save money, but I know it will make our lives a little easier," said Ivan Brass, vice president of information systems and technology at Simon & Schuster, Inc. in Old Tappan, N.J. "We don't want to get into the business of license tracking."

While noting that the program will probably be more expensive in terms of concurrent licenses, Cliff Vaughn, a systems administrator at FedEx Corp. in Memphis, said not having separate installation cycles for new installs and upgrades will make life easier. However, Vaughn said he would prefer that Microsoft allow his site to float licenses across time lines.

"If you buy a given number of licenses, you should be able to use those anyplace, anytime," Vaughn said.

Tiering up

Microsoft's revamped Select volume licensing program is broken down into the following three tiers:

- **Receiving the highest discount are users who sign an Enterprise agreement, which must include a purchase of at least 1,000 products.**
- **Next, is the Variable agreement. This is used to predict how many products users will purchase. Users must plan to buy at least 2,000 products to enter into a Variable agreement.**
- **A new Open tier has been added to the Select volume licensing program. The Open agreement requires no contract, but it also provides the smallest discount to the customer.**

— *William Brandel*

Health care at your fingertips

Blue Cross/Blue Shield of Massachusetts unveils 'health care ATMs'

By Tim Ouellette

Health care providers are taking the automatic teller machine (ATM) concept that revolutionized banking and modifying it for their own industry.

Health care ATMs, called Health Navigators, are being unveiled by Blue Cross/Blue Shield of Massachusetts. Currently to beta testing, they will initially be located at two major client sites — Boston City Hall and Wyman Gordon Co. in Worcester, Mass. — and at Blue Cross/Blue Shield headquarters in Boston.

Health Navigators, which are actually multimedia, touch-screen kiosks, let members swipe their health cards for account information. For example, members can print out their profiles, change primary care physicians or add dependents. The kiosks also provide general information on health issues and Blue Cross/Blue Shield plan options to nonmembers.

Because the project is still in its first stage, features such as checking on the status of a medical claim may not be added until later.

Developed by Multimedia Resources, Inc. (MRI) to Portland, Ore., using AimTech Corp.'s IconAuthor, Health Navigator combines graphics, digital video, sound and animation. MRI has worked on a few similar projects in the past two years, though so far, only the Blue Cross/Blue Shield project has been implemented.

Where previous prototypes featured a video tour guide residing in a window, Health Navigator's guide is fully integrated with the whole screen and moves all around (see photo). A version of Adobe, Inc.'s Acrobat has been included, which lets users print numerous on-line articles and pamphlets at the kiosk, with all available graphics, charts and fonts.

Customer view

One test site, the city of Boston, will be placing a health care kiosk at City Hall. "It's a blessing for me," said Irene Carrington, insurance director at the city's human resources/health benefit insurance office. "It will relieve my staff to do other types of work." More than half of the phone calls received by Carrington's staff relate to Blue Cross/Blue Shield issues, such as whether a certain physician's services will be covered.

At your service

Finally, for those who need more information, a special telephone handset lets users call a customer service representative. The point that the user is at within the kiosk window determines what type of customer representative will handle the call. For example, a nonmember reviewing general plan information would be sent to a representative that handles new accounts.

Health Navigators are not just a gimmick by health maintenance organizations to get on the multimedia bandwagon, however. The kiosks are seen by Blue Cross/Blue Shield and the business community as an essential way to provide information to members and the general public.

Health Navigator "gives us the ability to send a consistent message," said Mary Mikelk, manager of Blue Cross/Blue Shield's consumer technology group.



Health Navigator *has a video hostess that presents various plan options and provides information on the physicians in the network.*

The kiosks provide 24-hour member information and general health information, save labor costs on the number of support personnel required and give Blue Cross/Blue Shield a differeal way to attract new clients.

Business accounts who seek to relieve some of the administration duties from their benefits managers may turn to the kiosk for help.

Though not yet widely used, such kiosks show potential for the health care industry, according to Larry Pawola, senior vice president of the consulting division at health care consultancy Sheldon I. Dorenfest & Associates Ltd. in Chicago.

"I think it will take off in HMOs where they identify the benefits," Pawola said. "And these [HMOs] don't do anything without clear benefits."

Maria Alves, benefits manager at Charlton Memorial Hospital in Fall River, Mass., said she thinks Health Navigator would be a good resource for the hospital, not only for employees under the plan, but for patients and visitors looking to get clear health care information.

Information from the kiosks for the general public includes health plan options from Blue Cross/Blue Shield, special program listings, a directory of primary care physicians, recipes, health articles and stress and cardiovascular risk assessment surveys.

Because most companies do not use all of Blue Cross/Blue Shield's services, the kiosks can be customized to cover only the applicable information, Mikelk said.

Briefs

Intel drops prices

The sub-$2,000, 100-MHz Pentium PC could become a reality by year's end. In another major pricing action, chip maker Intel Corp. last week dropped prices on its Pentium chips by up to 31%. The biggest reduction was on the midrange 90-MHz chip, which will cost between $377 and $546. Intel also rolled back prices on its recently announced top-of-the-line 120-MHz Pentium chip by 21%. The cuts, which are part of Intel's regular quarterly pricing announcements, are expected to further accelerate the Pentium migration. Some analysts now say that the cutover to the new processor could be completed as early as the third quarter of this year.

Packard Bell at the top

Consumer market leader Packard Bell Electronics, Inc. has zoomed to the top of the U.S. market. According to preliminary data from market research firm International Data Corp., Packard Bell shipped an estimated 561,000 units in the first quarter of this year, up 37% from the previous year. Meanwhile, Compaq Computer Corp., which finished last year as the king of the desktop market, was second last quarter with 530,000 units. Finishing third for the quarter was Apple Computer, Inc. with 477,000 units. Former market leader IBM came in fourth with 410,000 units.

Micropath has upgrade concerns

Micropath, Inc. in Bellevue, Wash., is looking to capitalize on concerns about the potentially high upgrade costs of migrating to Microsoft Corp.'s Windows 95. Last week, the asset management software provider issued a press release billing its products as "essential tools to minimize complexities" and identify costs associated with migrating to Windows 95. "The hidden costs of actually deploying this 32-bit operating system — including memory, processors, disk space and other components — will far exceed the hard cost of purchasing the software," Micropath warned.

HP announces price cuts

Hewlett-Packard Co. in Palo Alto, Calif., will announce price cuts of up to 20% on its OmniBook 4000 notebooks. A base model equipped with an Intel 25/50-MHz 1486DX2 chip, a 260M-byte hard drive, built-in sound and a 10.3-in. passive-matrix color screen now costs $2,418. HP has also added 25/75-MHz DX4-based models to its lineup and 810M-byte hard drives.

[redacted]

Canon Computer Systems, Inc. has introduced the Canon object.station 50 and the Canon object.station 52, workstations based on Intel Corp.'s 100- and 120-MHz Pentium processors and designed for object-oriented computing.

According to the Beaverton, Ore., firm, the workstations feature dual-platform capabilities in a minitower design and have a Fast SCSI II interface and a Peripheral Component Interconnect bus. They run Next Computer, Inc.'s Nextstep and Microsoft Corp.'s Windows NT operating systems.

The workstations are built to order and vary in size and memory. Pricing begins at $4,000.

▶ *Canon Computer Systems (503) 614-5100*

Tumbleweed Software Corp. has introduced Tumbleweed Publishing Essentials, a tool set for publishing using Novell, Inc.'s Envoy portable document technology.

According to the Redwood City, Calif., firm, the product generates collections of Envoy documents and provides batch conversion of file formats associated with printing applications. It includes font embedding technology, full-text indexed search and an automated tool for generating hypertext links between Envoy documents.

Tumbleweed Publishing Essentials includes the Envoy Distributable Viewer and a 10-user license to Tumbleweed Viewer Extentions, which provides end-user viewing components for searching and navigating libraries of Envoy documents.

The product is available for both the Windows and Macintosh platforms for $695.

▶ *Tumbleweed Software (415) 363-7022*

Product short

IXI Corp. has announced IXI Panorama 2.0, workspace management software that allows instant access to screen-overflowing data and provides an extended workspace for data-rich environments. Cost: $179 for a single-user license. IXI, Santa Cruz, Calif. (408) 427-7700.



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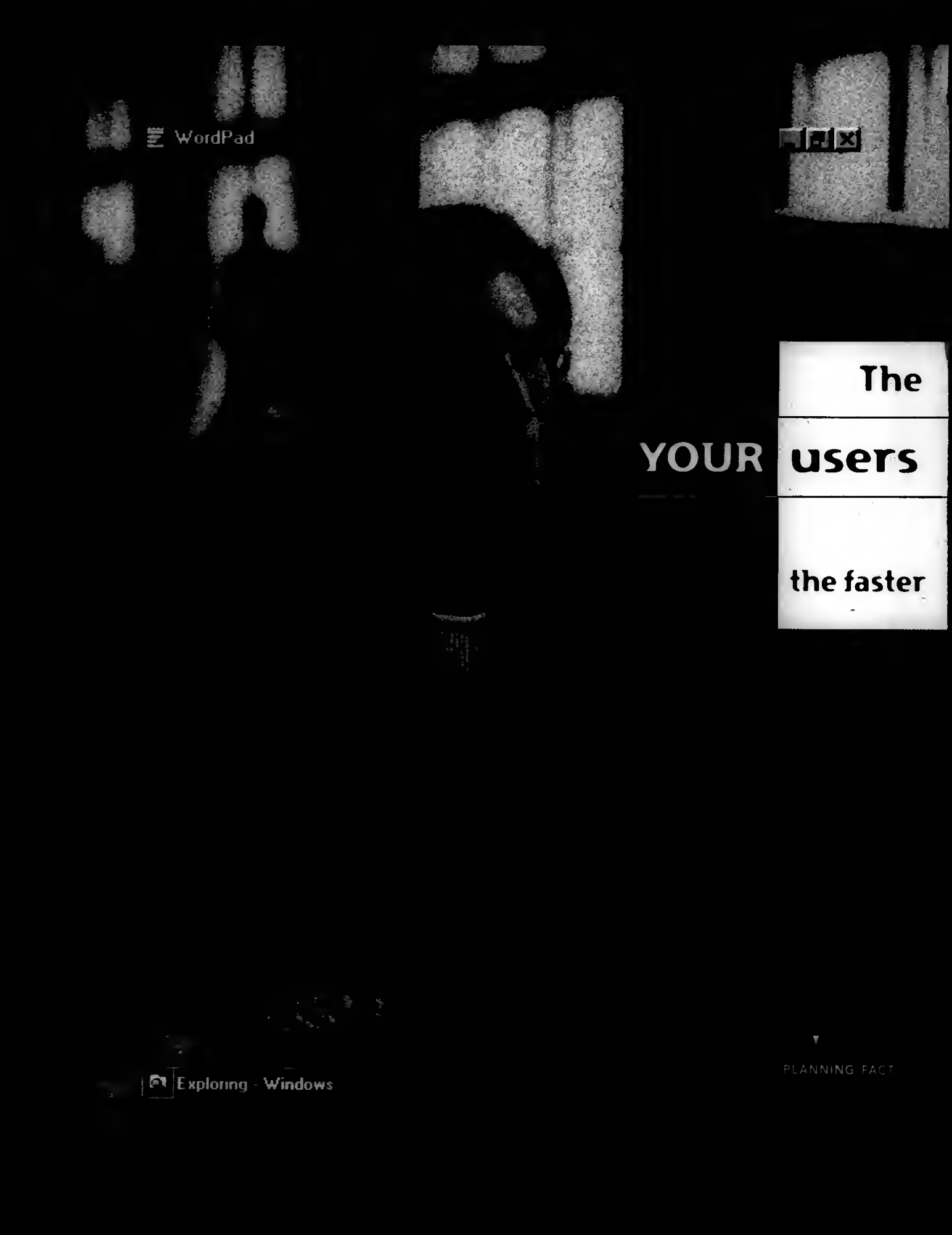
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Windows® 95 gives your users new ways to get things done. Procedures are simplified. The interface is more logical. It takes fewer steps to accomplish many tasks and even less time to figure things out. With Windows 95, users can accomplish more. Preemptive multitasking and multi-threaded applications let them work on several things at once. The Win32®-based application programming interface and OLE give a new generation of applications unprecedented speed and power. Usability Sciences, Inc. found that users finished tasks in nearly half the time they required in Windows 3.1.*

Plug and Play goes a long way toward eliminating disruptions for you and your users. Windows 95 recognizes changes made to hardware and reconfigures itself, without rebooting. Even systems that need reconfiguration regularly can be managed automatically. Plug a notebook PC into a docking station and the system automatically adjusts all new settings. Mobile users can change PCMCIA cards as easily as, well, changing cards.

Take a Shortcut

Windows 95 allows users to create shortcuts in the tangled world of the network. Once a resource is located, they simply create a desktop icon and in one click they're there. Create a simple, intuitive desktop that gives users one-step access to resources they use all day. Shortcuts can then be e-mailed between users without burdening the network and server with multiple copies of routed documents. Users can even drag a shortcut from the upcoming Microsoft Network online service.

Remote Possibilities

Dial-up Networking (remote access services) lets users on the road connect quickly and easily to frequently used networks. Desktop layouts of mobile computers look exactly like the PCs in the office, including shortcuts. And every time a person connects to or disconnects from the network, selected files can be automatically updated. Microsoft Exchange offers remote, as well as on-site users, a one-stop location for viewing and working with all types of information, from electronic mail and faxes to documents and public folders.

For a Closer Look

Look no further than WinNews. It's the on-line, electronic newsletter that updates you with the latest information about making the move to the upcoming Windows 95. To subscribe to WinNews, e-mail us at enews9@microsoft.nwnet.com with only the words Subscribe WinNews in the text of your message.



Microsoft

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USABILITY SCIENCES, INC. FOUND THAT AFTER A BRIEF SELF-GUIDED TUTORIAL, USERS WERE ABLE TO PERFORM COMMON TASKS NEARLY AS QUICKLY ON WINDOWS 95 AS ON WINDOWS 3.1 DURING THEIR VERY FIRST ATTEMPT. AND BY THEIR THIRD REPETITION, USERS WERE NEARLY TWICE AS FAST.*

* Source: Usability Sciences Study, October 1994.

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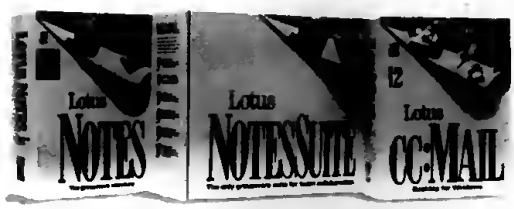
We conceived it.

We developed it.

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Let's see, who should support it?

By definition, groupware affects many people in your company and beyond. They rely on it to communicate, to share information, to be competitive. In fact, many of these people use Notes® and cc:Mail™ applications for the most important aspects of their jobs. You can't trust



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the support and service of these mission critical applications to just anyone. So it goes without saying that the same people who created the category of groupware should be the same people who support and service it. Lotus® and our Lotus Support Partners.

We're the only software developer offering a truly global approach to support, with 14 major support centers around the world delivering consistent programs and services. Since Lotus spent years developing and evolving groupware, it stands to reason our support and service professionals are knowledgeable of complex, cross-platform, enterprise-wide architectures.

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Notes imitators diverge

Oracle, HP bring different look to network messaging market

By Suruchi Mohan

It was Lotus Development Corp.'s Notes platform that first popularized the notion of groupware. But the concept has become so fashionable that every major vendor with a messaging system to offer is loading it up with features that help users collaborate network-wide.

Two such vendors are Hewlett-Packard Co. and Oracle Corp. — both late entrants into the groupware market with completely different approaches. HP comes to the marketplace with an open architecture that leverages a strong messaging system; Oracle builds on its powerful Oracle7 database, developing a proprietary groupware system.

Notes is at the high end of the groupware scale, with powerful application development capabilities. Microsoft Corp.'s Exchange Server will offer some of the same capabilities when it becomes available. Products such as Collabra Software, Inc.'s Share ride on the existing messaging transport within an organization. Oracle and HP are somewhere in the middle — offering their own messaging infrastructure but not Notes-like application development.

Group war

Oracle's proprietary approach to groupware vs. HP's open strategy approach

Oracle	HP OpenMail
Proprietary directory	X.500-compliant directory
Proprietary MTA	Optional X.400 and SMTP* MTA
Supports MAPI	Supports MAPI
Offers remote access, messaging and scheduling	Offers remote access, messaging and scheduling

*Simple Mail Transfer Protocol

Open up

Both approaches have their strengths, but analysts seem to prefer an open architecture.

"I have an affinity for HP's approach," said Tim Sloane, director of messaging applications and services at Aberdeen Group in Boston. "HP is getting many third parties in the game vs. Oracle, which is much more in the mode of 'Let's build as many groupware solutions [as we can] on our database structure [for] more database traffic and sales,'" he said.

Judy Rosall, vice president of marketing at The Radicati Group in Palo Alto, Calif., said, "HP is expanding their platform for workgroup and doing plug and play. They are beefing [up] the back-end services, using E-mail as a utility and adding components. Oracle has not made a commitment to collaborative computing in the past and has lost some time there."

Oracle seemed to be trying to remedy this, making a big push for its groupware strategy at the recent Electronic Messaging Association (EMA) conference in New Orleans, which was also the venue for HP's announcement of the addition of calendaring and scheduling.

Bad move?

Tim Sloane, an analyst at Aberdeen Group, said HP may have hurt itself with its completely open approach. "HP's OpenMail is so open that it put them at a disadvantage against Microsoft and Lotus with calendaring/scheduling and bulletin board services," he said. "HP has had to work with third parties to integrate those features with their platforms."

For now, Oracle is offering electronic mail, calendaring and scheduling and directory services as part of Oracle Office 2.1, which is part of a larger Documents groupware strategy unveiled in September. The company said it hopes to announce the document management and forms pieces later this year. It is working on developing these components and establishing partnerships with third parties to provide them, said John Bartlett, director of marketing at Oracle in Redwood Shores, Calif.

Despite the attempt at garnering third-party support, Oracle's system remains proprietary, sitting on top of its database and using a proprietary Message Transfer Agent (MTA) and a proprietary directory. The company is working on developing an X.400 MTA and is expected to announce an agreement with Isocor in Santa Monica, Calif., by which the latter will provide an X.400 MTA. Additionally, Oracle has a stated direction to support X.500 directory services but has not revealed a time frame for delivery.

Pius and minus

But for users in large Oracle environments, Oracle Office works well. The advantage of having a powerful database and running across multiple platforms is not lost on Michael Kline, senior engineer at the Virginia Department of Health in Richmond. It allows "queries across multiple boxes and makes data look seamless" to the end user. The department uses Oracle Office for tasks such as messaging and calendaring.

But that very strength may affect the product's popularity, Sloane said. "For companies not so database-driven, Oracle is a much tougher fit."

Rosall said HP, which seems to base its appeal on mixing and matching components, "has a strong commitment with the backbone piece. It is great for end users because they have choices."

"They are adding the components that represent what we had in the mainframe legacy environment: bulletin board services, calendaring [and] scheduling," said Blane Woodard, manager of information services at Northwestern Mutual Life in Milwaukee. "We have HP in a big way, but users don't realize it. OpenMail is in the background" because users work with clients of their choice.

HP supports a variety of mail packages. They include Microsoft's Mail, Lotus Development Corp.'s CC:Mail and Verimation, Inc.'s Memo85 as well as bulletin board services and other groupware products and services. Although HP has a proprietary X.500-like directory, an agreement with Control Data Systems, Inc. announced at the EMA conference will let administrators use the latter's X.500 directory instead.

Groupware users, vendors split over what it all means

By William Brandel

So, what is groupware?

More than five years after Lotus Development Corp. coined the term groupware and shipped the first Notes server, this software category remains largely undefined among users.

According to a study conducted by the *Computerworld* Database Division of more than 1,000 user sites, most users' responses still radically differ from vendors' as to what groupware means to them.

Out of all the groupware offerings on the market, namely those offered by Microsoft Corp., Lotus, IBM, Novell, Inc. and its WordPerfect Applications Group, only Lotus' Notes is widely recognized as a groupware product, the survey concluded. Fifty-eight percent of users recognize it as the defining groupware product.

Following Notes is Microsoft's Office applications suite, with a 33% recognition factor. Third is Microsoft's Windows for Workgroups, an operating environment with fax and electronic-mail capabilities.

Defining issue

"The way that users define groupware is totally different from how vendors define it," said Rich Mikita, general manager at the *Computerworld* Database Division in Framingham, Mass.

> "Marketing is very much like a political campaign, and Notes has become the Bill Clinton of software: It's whatever you want it to be."
> — Jeffrey Tarter, editor, "Soft Letter"

For example, because Microsoft's Office desktop suite dominates the applications suite market, it ends up having a strong showing in the groupware segment, with 31.2% mind share, according to a second *Computerworld* study. Ironically, Exchange, Microsoft's own groupware offering, has not even shipped yet.

Lotus, which has tried to define the groupware market with Notes, follows Microsoft with 30.4% mind share.

Analysts said these results map directly to Microsoft's ability to co-opt the groupware vendor marketing platform from Lotus.

"Lotus may have pioneered the market with Notes, but they left the category almost empty of meaning with Notes," said Jeffrey Tarter, editor of "Soft Letter," an industry newsletter in Watertown, Mass. "Marketing is very much like a political campaign, and Notes has become the Bill Clinton of software: It's whatever you want it to be."

It may come as no surprise that Lotus disagrees.

"Fifty-eight percent of the market recognizes Notes as groupware," said Jane Eisenberg, a Notes product manager. "The market tells us we are groupware."

While Lotus and Microsoft are fighting it out for product and vendor mind share today, Novell is clearly making inroads in terms of users' future buying decisions. From the fourth quarter of 1993 to the first quarter of this year, the combined Novell/WordPerfect mind share rose from 10.5% to 17.7%, according to the survey.

Confusion slows down workflow software

Industry group suggests ways to clear things up

By Tim Ouellette

One of the big challenges for information systems groups embarking on an adventure in workflow is separating the business need from the lure of the technology.

Now, the Association for Information and Image Management (AIIM), an industry group in Silver Spring, Md., is trying to clear things up a little. At trade shows and association meetings, AIIM is telling users they should think about what they want their application to do before deciding which one to buy.

Workflow software automates and tracks the flow of documents and work processes, such as processing a loan application, through a company. The focus is on how work normally moves through an organization — the process — instead of the specific information.

"Part of what I try to do is demystify the whole thing," said Priscilla Emery, vice president of market research and development at AIIM. "It's a growing market. When something is growing, it is sometimes confusing because you have a proliferation of products."

AIIM put on a presentation at Comdex/Spring '95 last month and plans similar presentations at conferences later this year. Far from alienating vendors, the point is to clear up confusion in choosing a workflow solution.

Glaxo, Inc., a Durham, N.C., pharmaceutical company, automated the processing of its regulatory correspondence with the Food and Drug Administration last year.

"The whole key is making sure the entire effort is driven by the users instead of technology people" so the business need, not the technology, drives the choice of a system, said John Burris, a senior systems analyst at Glaxo.

"People tend to think of workflow as a product. It is not a product but the building of a solution based on several tools" of which workflow software is only one part, said Suresh Shenoy, a vice president at Information Management Consultants, Inc. in McLean, Va.

Workflow software vendors have been successful at the departmental level in solving one specific problem, but scaling these systems up to a mixed enterprise network has been harder. The array of choices from workflow vendors — complicated even more by operating system, hardware and database compatibility issues in enterprise networks — often leaves the user little clear choice.

Emery placed workflow software into four groups: high-level transaction processing from the likes of FileNet Corp. and IBM, groupware such as Notes, publishing systems and electronic mail-based systems such as Delrina Corp.'s FormFlow.

"Some vendors don't want to be put into a category," Emery said. "They want to be everything to all people, and they are not. And users will find that [out] down the road" if they purchase the wrong product.

Before going with the 'flow...

Sample questions to ask before buying software to automate a process, such as loan processing

From a records management point of view:

- How many loan requests are received in a certain time period?
- What critical information do the requests contain?
- How much storage is used?

From a workflow point of view:

- Are multiple processes triggered when the loan request is received?
- Who needs to retrieve the loan request?
- After the loan request is filed, will it have to become active in the work process again?

Source: Information Management Consultants Inc., McLean, Va.

Standards that may alleviate some of the confusion are still months away. The Workflow Management Coalition (WMC), made up of most major workflow vendors and consultants, is developing standards for terminology, interfaces, task parameters and application programming interfaces.

Help is on the way

Tom Koulopoulos, president of Delphi Consulting Group, Inc. in Boston and a member of the WMC, said he expects some standards to be developed by the end of the year or early next year.

Until then, what can users do?

Make sure the workflow software runs on an open database, said Koulopoulos. Systems that use proprietary databases lock the business-process information away, and that data could be lost with a move to a different workflow software.

Shenoy recommends that users obtain the support of upper management instead of working from the ground up. Then they should assign a specific goal for the project, such as improving customer service in the loan process, he said. Most importantly, they should find ways to measure customer service to determine the success of the automation.

Reducing costs is not the only way to look at the results. Sometimes revenue may increase as a result of installing a workflow system, Emery said.

Have you tried to install a workflow system? We'd like to hear about it. Contact Tim Ouellette via E-mail at timo@cw.com, by phone at (508) 820-8215 or by fax at (508) 875-8931.

[redacted]

Jean S. Bozman

Can Sun get back to basics?



Even as Sun searches for growth in new markets, such as commercial Unix and Internet servers, longtime Unix workstation users are looking for signs that the $5 billion Sun will focus its attention on their agenda.

A lot of technical workstation users have waited two years for Sun's SPARC chips to catch up with the speed of Digital's Alpha and Hewlett-Packard's PA-RISC machines. To compensate for SuperSPARC chip speeds at 98 SPECint92 ratings, users have taken to buying Sun's multi-CPU desktop machines.

But help may be around the corner. Sun is preparing to ship systems based on its new UltraSPARC 64-bit chips later this year. UltraSPARC chips, which are two to three times the speed of current SuperSPARC chips, are being sampled by 13 Sun-compatible vendors. But whether longtime users will go for the new hardware — or bolt for RISC systems from other Unix vendors — is still unknown.

Many users just bought 1994-vintage SPARCstation 20s, some of which are used as technical servers, and they may not need more power until next year. But Sun's workstation announcement earlier this month was a recognition that the company must pay attention to its technical users. "A major thrust for Sun in 1995 is to re-establish our visibility" in the technical market, said Bob Pearson, director of workstation marketing at Sun Microsystems Computer Corp.

Key features to look for in this year's announcements, he said, include higher-performance CPUs, higher-performance graphics and an expansion of multiprocessing desktops.

> "We're firing the first salvo. They get a chance to fire back. We'll claim King of the Hill for whatever time we've got."
> — Bob Pearson, Sun marketing director, referring to HP and IBM graphics workstations

With the program

On the software side, many longtime Sun users are still waiting to move their applications from the SunOS operating system to Solaris 2.x, three years after it first shipped. One prominent example, The Chase Manhattan Bank, recently bought more than 500 Sun workstations for financial traders but is holding on to SunOS applications and the SunNet Manager network management software suite. Solaris 2.x is running on a handful of test and development servers.

Some longtime Sun users say converting to Solaris 2.x may take nearly as much effort as converting to another Unix vendor's system. Sun counters that it provided migration aids and backward-compatibility in June 1993 with SunOS applications, which run under Solaris 2.x.

Sun has made it a high priority to get its top 100 customers to migrate to the Solaris 2.x software environment, Pearson said. The effort to set this high-profile migration example will become more urgent with UltraSPARC's arrival because UltraSPARC systems will not run SunOS at all. "If they don't convert older systems, we can make sure they're ready to bring Solaris 2 systems onto their network," Pearson said of the top sites. "We're working hard with tools, utilities and support services to make that easy for our customers."

Many longtime SunOS workstation users rely on Berkeley-style SunOS networking and have added a few Solaris 2.x servers to their enterprise networks. Many say that, for now, they will stick with tried-and-true SunOS applications, but when they need more desktop firepower, they will conduct a wide-ranging evaluation of all Unix workstation offerings.

However, Sun's vulnerability in its installed base has not been lost on other vendors. HP has a marketing program designed to lure Sun users with trade-up options, financial incentives and software-migration aids. Digital launched a similar plan last week, offering a software translator that converts SunOS code to Digital Unix with little user effort, Digital claims.

What Sun really needs to fuel its next stage of growth is to bring those original customers along, even as it lines up new business. It is not enough simply to ship so many Solaris 2.x units (about 300,000 per year) that they outnumber the original cadre of SunOS machines.

Sun should provide a more comprehensive migration program and study the way larger rivals HP and IBM leverage user conferences by laying out a blueprint for migration. Both HP and IBM have major Unix operating system transitions. But both offer users automated migration utilities for those systems and are reassuring longtime customers along the way.

Last week's SunWorld and Solaris Developer Conference in San Francisco were ideal places for Sun to do the same. Whether Sun did an effective job of persuading its original customers to buy into its vision for the future remains to be seen.

Bozman is *Computerworld*'s senior editor, Open Systems.

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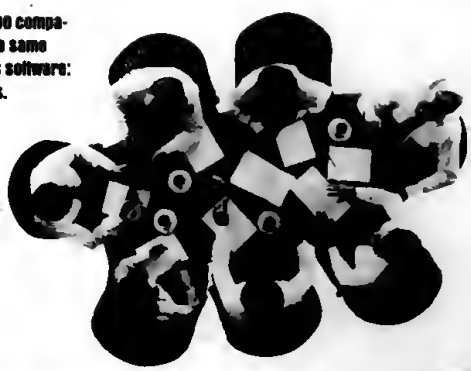
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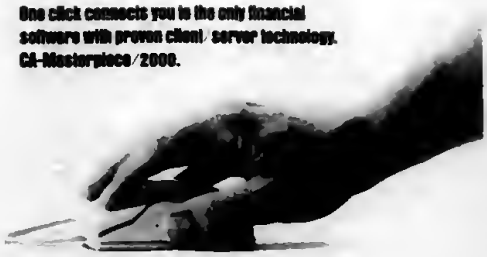
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Integra turns page on mobile worker

Paging servers ready to track travelers automatically

By Stuart J. Johnston

The scene is a Wall Street brokerage firm. The subject: A trader needs to make it to a meeting with a potential client but is worried about the brokerage's stock that has been performing erratically.

The conflict: Skip the meeting and wait around to place a buy or sell order on the stock or make the meeting and perhaps close a new account? The cause of the conflict and other similar situations, however, could vanish by the first quarter of next year.

That is when Integra Technology International, Inc. in Bellevue, Wash., plans to ship its paging servers for Microsoft Corp.'s BackOffice and Exchange Server products. The trader would be able to meet with the new client after instructing his computer to page him if the stock price shifts.

Integra Paging Server for Microsoft Exchange, for example, will enable corporate developers to build applications that can use rules and the address book in Exchange Server to automatically call pagers when specified conditions have been met.

On the road

"More and more companies are dealing with the fact that they have to deal with [an increasing number of] mobile workers," said Dwayne Walker, chairman and chief executive officer of Integra. Looking at the more than 20 million pagers already in use, he said he sees a demand to better integrate that technology with client/server applications.

One analyst who has been briefed on the products, which were introduced earlier this month, agreed.

"Given the increase in 'feet on the street' [mobile workers], this kind of technology is finding a place in the market," said Tim Sloane, director of messaging applications at Aberdeen Group, a workgroup and database analysis firm in Boston.

Integra Paging Server for Microsoft Exchange is scheduled to ship within 60 days of Exchange Server, which is now set for release before the end of the year. A shipping schedule for Integra's server for BackOffice has not been announced.

Exchange Server is the follow-on to the current Microsoft Mail Server. BackOffice is a suite of server products that the company sells in a bundle with Windows NT Server.

Integra Chairman and CEO Dwayne Walker estimates that as many as 50 million users function at least part-time as mobile workers

Bring it on

Many large Microsoft Mail sites are eagerly awaiting Exchange Server, and one user contacted by *Computerworld* expressed interest in Integra Paging Server for Exchange.

"Especially in the support area of server maintenance or [where you have] a server going down — at that point it would be really interesting," said Jim Lisiak, senior software engineer at Chevron Technology Services Co. in San Ramon, Calif.

Integra Paging Server for Microsoft BackOffice will be able to take advantage of functions in the various BackOffice servers to trigger paging functions, Walker said.

Both of Integra's paging servers will be capable of sending alphanumeric messages to pagers.

While some of these paging functions can be accomplished already, they are usually less than elegant, Sloane said.

Integra has not yet announced pricing for either of the paging servers.

Cross-platform E-mail keeps vendors waiting

By Suruchi Mohan

The X.400 API Association, also known as XAPIA, has delayed announcing Version 2.0 of its electronic messaging specifications until the end of the summer.

XAPIA is a group of vendor and user companies trying to develop common specifications for electronic messaging. These specs are known as Common Messaging Call (CMC).

E MAIL

Originally, the group had planned to announce CMC 2.0 in early May. The initial version, CMC 1.0, is a vendor- and platform-independent set of application programming interfaces (API) for developing messaging applications. It provides APIs for only three simple functions: send, receive and address mail.

Easing into it

Although the CMC specifications have been slow to gain acceptance, they are expected to play an important role in cross-platform applications, according to Chris Williams, program manager at Microsoft Corp. in Redmond, Wash.

He said vendors want this specification to succeed because of its cross-platform appeal. Right now, however, Lotus Development Corp., Microsoft and Novell, Inc. have included it only in Windows products. Microsoft said it will support the specification on the Macintosh platform early next year.

Further, Williams said CMC will be part of the Messaging Application Programming Interface (MAPI) 1.0 specification that will be released with Microsoft's Windows 95. To use the Windows 95 logo, application developers will have to show support for CMC.

That should not be hard because the specification has had immediate acceptance from the industry, said David Ferris, president of Ferris Research in San Francisco. "CMC is useful for simple API calls. Version 2.0 will be richer and aligned with MAPI," he said.

In the package

CMC 2.0 seeks to give developers more functions to keep pace with user needs, according to Frank Dawson, a senior programmer at IBM in Roanoke, Texas, and secretary of XAPIA. Version 2.0 will offer the following:

- **An object-oriented data model.** Software is evolving from file-centric to object-oriented, and the specification will give developers the flexibility to add features using this model.
- **Multimedia mail.** CMC 2.0 will allow for multimedia mail that includes video, audio and image files. It will provide stream I/O support, which essentially gives the flexibility of multimedia support in small footprint workstations. Unlike Version 1.0, which provides only for multimedia attachments, this version will integrate multimedia with the message.
- **Mail-enabled capabilities for message-reliant applications.** Message-reliant applications, such as workflow, document management and electronic data interchange, require more than just the basic functions that Version 1.0 affords. For example, they need composition and the ability to query the individual attributes of mail. Version 2.0 will provide these functions.
- **Ability to read from one application and write to another.** For example, CMC 2.0 will allow users to be in a calendaring application and send out a page from within that application.

[redacted]

Platinum Technology, Inc. has introduced UniVision 2.1, a performance monitoring and management system for Unix servers and relational databases in distributed environments.

According to the Oakbrook Terrace, Ill., company, UniVision 2.1 collects data that helps database and systems administrators identify problem areas in their databases and servers. It features console/agent architecture, which allows agents to be installed separate from the consoles on the servers they are monitoring. It also features distributed performance data management.

UniVision 2.1 supports many Unix platforms, including Hewlett-Packard Co.'s HP 9000 and IBM's RS/6000. It supports Oracle Corp. and Sybase, Inc. databases.

Pricing for UniVision 2.1 starts at $8,000 for each console and $3,500 for each agent.

▶ *Platinum Technology*
(708) 620-5000

Zitel Corp. has announced the Storage Co-Processor (SCP), a product for open systems data storage.

According to the Fremont, Calif., company, SCP works on Unix and Microsoft Corp.'s Windows NT to relieve the host system of tasks involved in managing data access and updates. SCP's processing of these tasks independently from the host improves the performance of the relational database management systems and network application servers.

SCP was designed to provide secure data storage and plug-and-play operation.

Pricing for SCP depends on configuration and starts at $9,450.

▶ *Zitel*
(510) 440-9600

Kidasa Software, Inc. has announced Milestones, Etc. 4.5, project management software.

According to the Austin, Texas, company, Milestones, Etc. 4.5 gives users click-and-drag tools to make tracking and production schedules, manufacturing cycle charts and machine schedules, Gantt and milestone charts.

The product also operates as a server for Microsoft Corp.'s OLE 2.0 standard, which lets customers embed schedules in other Windows documents.

Milestones, Etc. 4.5 includes outlining, project interface, custom date headings and data manipulation features. The product is available in a 16-bit version for Windows 3.1x and a 32-bit version for Microsoft's Windows 95 and Windows NT.

Milestones, Etc. 4.5 costs $190 for a single-user license.

▶ *Kidasa Software*
(512) 328-0167

Product short

Connor Storage Systems, a division of Conner Peripherals, Inc., has announced CR12-RAID and CR6-RAID, storage systems that support IBM's OS/2 Warp, OS/2 LAN Server 3.0 and The Santa Cruz Operation's SCO Unix operating systems. Cost: starts at $8,995. Conner Storage Systems, Lake Mary, Fla. (407) 263-3500.



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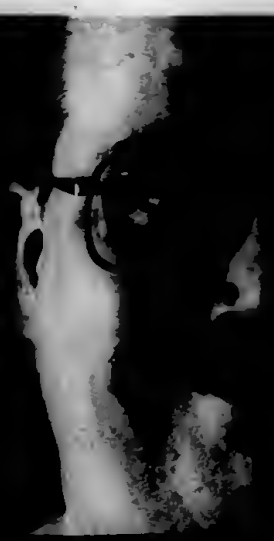
RAY: "We've kept our staff lean and cut training time. We've reduced response time to two seconds and the time it takes to produce MRPs has been cut in half. Thanks to Btrieve, we are molding our system to meet our growing company's needs."

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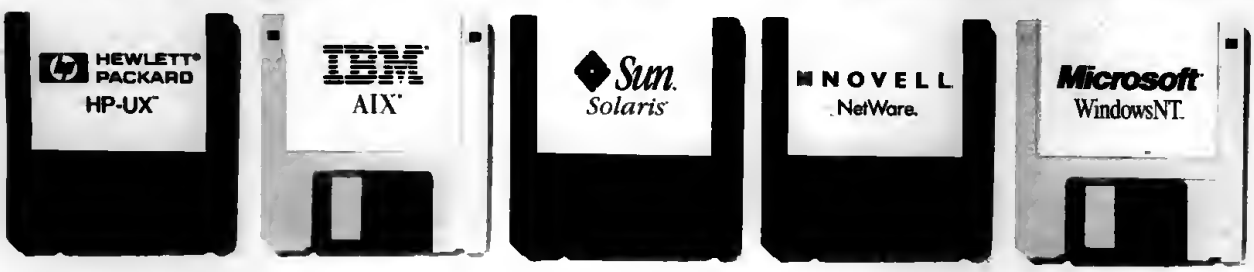


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Token Ring switches into high gear

By Michael Fitzgerald

For something that has a flat EKG, the Token Ring market sure seems to have a lot of life.

Many observers, such as John DePietro, an analyst at International Data Corp. in Framingham, Mass., say Token Ring LANs will simply never become the big-dollar market that Ethernet is.

But some say the market will grow rapidly for some time to come.

"The Token Ring market is really going to take off later this year," said Peter Rubicam, an analyst at Dean Witter Reynolds, Inc., a New York brokerage house.

Rubicam is not alone in his expectation that Token Ring switching will accelerate. Witness Bay Networks, Inc.'s recent purchase of Centillion Networks, Inc. for $140 million. Or Cisco Systems, Inc.'s Token Ring router/hub, a product jointly produced with LanOptics Ltd. in Israel.

Ringing in the deal

Token Ring switching is hotter than the roughly $50 million market would suggest, as these recent events show:

- **Bay Networks buys Centillion Networks for $140 million, gaining Centillion's Speed Switch 100.**
- **Cisco and LanOptics produce a router/hub with Token Ring capabilities.**

Attention grabber

The reason for continued interest in Token Ring is the installed base of customers who use the IBM networking technology. Analysts point out that because many large companies tend to choose Token Ring, there is significant growth automatically built in. Also, these types of enterprises will tend to spend the extra money to get Token Ring as they think it is cheaper than Ethernet LANs in the long run because it is more reliable.

"Sites with both [Ethernet and Token Ring] generally have their mission-critical stuff running on Token Ring, partly because it's assured delivery on the network," said Stan Schatt, director of LAN research at Computer Intelligence InfoCorp., a market researcher in La Jolla, Calif. Token Ring's architecture gives it an inherent level of security over Ethernet.

Smokin' Token

Token Ring switching is expected to grow rapidly. The Yankee Group projects that $54 million worth of Token Ring switches will be sold this year and that $339 million will be sold in 1996 and $481 million in 1998.

Schatt said Token Ring offers more sophisticated management features than Ethernet. He estimated that 50% of all Token Ring shops also use Ethernet.

Now Bay Networks, which sells to these customers on the Ethernet side, can also sell them Token Ring products, rather than ceding the business to a company such as Madge Networks, Inc. or Standard Microsystems Corp.

The Centillion purchase "was a very good move on the part of Bay, and it fills in a serious gap in its product line," Schatt said.

In particular, because the Speed Switch 100 supports Asynchronous Transfer Mode (ATM) as well, Bay has a solid entree into the ATM market. ATM is expected to be a next-generation, high-bandwidth data transfer protocol.

Ironically, despite the small number of vendors in the Token Ring market, Schatt said there is little room for newcomers. The enterprisewide nature of Token Ring makes it a complex sell.

Connections count

But well-established players such as Cisco can leverage their relationships to break into the market. Cisco's new 2517 router/hub brings LanOptics' unshielded twisted-pair Token Ring hub media into Cisco's Internetwork Operating System.

The router/hub will ship in July and cost $5,995 to $7,995. It includes 4M to 8M bytes of flash erasable programmable read-only memory and 2M to 6M bytes of dynamic RAM.

Targeted at branch offices, the product has 11 unshielded twisted-pair Token Ring hub ports, two synchronous serial wide-area network ports and a port for Integrated Services Digital Network Basic Rate Interface.

Windows NT Web servers challenge Unix systems

By Ellis Booker

While surveys indicate that Unix approaches continue to dominate the World-Wide Web scene, the market for Microsoft Corp. Windows NT-based Web servers is expanding.

Last week, O'Reilly & Associates, Inc. in Sebastopol, Calif., entered the fray with WebSite, a $499 Windows NT server.

WebSite joins Purveyor, the first commercial NT Web server software. Purveyor, from Process Software Corp. in Framingham, Mass., is a commercial version of a freely available NT Web server product from the European Microsoft Windows NT Academic Centre (EMWAC).

User Charles Stack, president of Bookstack Unlimited, Inc., an Internet-based bookseller in Cleveland, said the EMWAC server is suitable for Web sites that only handle documents but that it is not as robust for programming interactive applications such as database interfaces. Bookstack's Web site (http://www.books.com), which opened two months ago, lets visitors search and order from a list of 260,000 book titles.

But Stack is covering his bets. A beta site for Purveyor and now a paying customer, he still uses the EMWAC server for documents. He is also a beta customer for the O'Reilly product.

Sales of the $1,995 Purveyor, which began shipping in late March, have been "stupendous," according to Dave Rosenlund, director of marketing at Process Software. He said several hundred servers have shipped so far through Process' direct sales and distributor Digital Equipment Corp.

Different class

Vendors and analysts alike said the availability of NT platforms will encourage a new class of users to deploy Web pages, especially those put off by having to maintain their first Unix processor. "The beauty of [O'Reilly's] Web site is you get all the wonderful graphical administration features of Windows NT," said Ken Spreitzer, president of Internet presence provider Maximized Online, a subsidiary of Maximized Software, Inc. in Irvine, Calif. Maximized Online has used the beta version of the O'Reilly code since February.

NT-handed

Some commercial Web servers for Windows NT

- **Netscape Communications Corp.** in Mountain View, Calif., in late March expanded its $1,400 Communication and $5,000 Commerce server line with Version 1.1, which added NT support.
- **Spyglass, Inc.** in Naperville, Ill., will release an NT-based Web server for OEM customers in July. It is expected to cost as little as $100 per copy in volume.
- **Open Market, Inc.** in Cambridge, Mass., in April unveiled Unix and NT-based servers that are distinguished by support for SSL and SHTTP security schemes.

Spreitzer, too, had used the free EMWAC server code but found a commercial product more robust. As proof, he mentioned the experience on Valentine's Day, when his firm's "build a card" application was noted as the "Cool Site of the Day" and received more than 10,000 hits on its WebSite server. Its server is based on an Intel Corp. 90-MHz Pentium and has 32M bytes of RAM, a 1G-byte hard drive and a 56K bit/sec. Internet link.

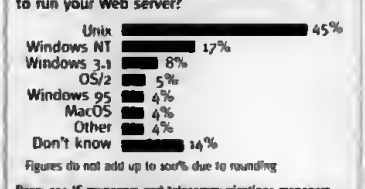
"We ran out of network bandwidth and processing power, but the software handled the traffic like a champ," he said.

Spreitzer also said the commercial NT server has better features, such as a Common Gateway Interface (CGI) link to Windows tools and languages such as Visual Basic. CGI is the standard programming interface for Hypertext Transport Protocol (HTTP) Web servers. "You can get EMWAC to do the same thing, but it takes a lot of effort," he said.

For all the excitement over NT Web servers, analysts noted that Unix-based systems still dominate the market. "[Our survey] verified that Unix won out by a long shot [over NT], 45% to 17%," said Greg Cline, director of network integration and management research at Business Research Group in Newton, Mass. (see chart).

Working the Web

Under what operating system are you most likely to run your Web server?



Figures do not add up to 100% due to rounding

Base: 154 IS managers and telecommunications managers

Source: Business Research Group, Newton, Mass.

O'Reilly last week said it plans a fall upgrade to WebSite Version 1.1 that will support both Secure Hypertext Transport Protocol (SHTTP) and Secure Socket Layer (SSL). These are, respectively, the leading application-level and session-level client/server security schemes for the Internet.

Like many other vendors, O'Reilly is using the power of the Internet for distribution. It will soon put a free demo version of WebSite at its WebSite Central (http://website.ora.com/).

Spyglass' Parker: 'Net security critical

Spyglass, Inc. in Naperville, Ill., has the exclusive license to commercialize the Mosaic Internet browser, developed at the National Center for Supercomputing Applications at the University of Illinois at Urbana-Champaign. Although roughly 70% of the installed base of browsers on the World-Wide Web use rival Netscape Communications Corp.'s Navigator product, Spyglass is a company to watch because of its OEM agreements with Microsoft Corp., Digital Equipment Corp. and AT&T Corp.

By the end of the year, Spyglass expects its more than 30 licensees to ship 22½ million copies of Enhanced Mosaic, either as part of stand-alone browsers or integrated into other applications.

Michael Parsons, U.S. correspondent at the IDG News Service, and Ellis Booker, senior editor, networking, recently talked with Andrew Parker, director of product marketing and business development at Spyglass, about commerce and security on the Web.

Q What do you think of the announcement by Terisa Systems in Menlo Park, Calif., that it plans to bring together Secure Hypertext Transport Protocol [SHTTP] and Secure Sockets Layer [SSL] into a common standard?

A Well, if what they say is true, and HTTP and SSL can be integrated together and work as a single standard, great. Do I believe that will happen? No. I don't believe there will be one standard for security on the Internet.

Q What will enable secure commerce on the World-Wide Web?

A You must have a certification authority if you are using a public-key encryption. The certification authority provides a way for a third party to establish that the buyer and the seller are who they say they are. I've talked to lots of different security software and encryption vendors about SHTTP and SSL, and they've all told me they could defeat them in seconds.

Q So what's the solution?

A You need a certification authority — the U.S. government, the post office, somebody who can take responsibility for the public keys. In fact, I don't think it will be either of those. It will be a bank.

Q You recently announced an electronic payment system. Is that secure?

A We have developed a payment system with the Electronic Business Co-Op. Our partners are Tandem Computers, Inc., V-One Corp. and Checkfree Corp.

We have an electronic wallet that contains your Visa, American Express or other credit-card details. It also contains 100 different public encryption keys. That information is encrypted using a particular key, and then your transaction data is sent to the merchant, who adds his merchant code. That encrypted data is then sent to the authentication company.

Because lots of keys are stored locally, it's easy to switch to a different encryption key on a regular basis.



"No. I don't believe there will be one standard for security on the Internet."

Andrew Parker, director of product marketing and business development, Spyglass, Inc.

Q From a tools standpoint, where is the most need for development?

A The biggest issue will be managing Hypertext Markup Language [HTML] pages. Right now, when you want to delete a page, you have to manually modify everything that connects to that page. Tools are coming along that can create pages out of a database. This makes it a data management issue rather than an HTML authoring issue.

Q Is Spyglass considering entering the HTML tools market?

A No, although we have relationships with companies that are already there. I'd watch for the heavyweights, the database companies [to get involved]. I don't doubt they are working on this problem right now.

Q One of your licensees for Enhanced Mosaic is Microsoft. What do you think about its scheduled entry into the on-line market in August?

A Anything that puts more users on the 'net is good for the industry. But I think the browser companies and other Internet [tools] suppliers will be able to compete because their development cycles are shorter.

Where to get news

News junkies have lots of outlets on the Internet. Along with your favorite Usenet discussion groups, you might want to add the following news outlets to your hot list:

- **ClariNet Communications Corp.**, publisher of ClariNet e.News, the first and largest Internet news service. Customers include corporations, universities and Internet service providers. The cost for a ClariNet site license is $3 per networker per month for the first 100 networkers and $1 per networker per month thereafter. A single-user subscription costs $40 per month. (http://www.clarinet.com/index.html)

- **Individual, Inc.**, a news subscription service. Individual's interactive, customized services include: First, for corporate workgroups and enterprises; HeadsUp, for individual executives; and iNews, for the broad market of business professionals. Look at Individual's latest product, NewsPage, for a free trial. (http://www.newspage.com/) the Interactive Media Business Overview (http://www.newspage.com/NEWSPAGE/cgi-bin/walk.cgi/NEWSPAGE/info/ds/ds/ds/)

- Finally, for those tired of reading news about information services and products and want to see them up close and personal, check **Automatrix, Inc.'s Schedule of Internet Conferences.** (http://www.automatrix.com/conferences/)

Weird Web

- **Encyclopaedia Britannica, Inc.'s Birthday Calendar.** See the famous and infamous who share your birth date. (http://www.eb.com/calendar/calendar.html)

- **CyberSight's Graffiti Wall.** Leave your own mark or look at what others have left behind. (http://cybersight.com/cgi-bin/cs/gw?main)

- **Sound Bytes, the WWW TV Themes Home Page.** Download audio files from hundreds of TV shows, cartoons and commercials. (http://ai.eecs.umich.edu/people/kennyp/sounds.html)

Delphi to hook up to Internet with Web site

By Ellis Booker

Delphi Internet Services Corp. has been playing catch-up with its on-line competitors, having been late with both a graphical user interface and a corporate stop on the Internet. But it is pushing ahead with its planned Web site.

Alan E. Baratz, Delphi Internet's chief executive officer for the past nine months, said Delphi's World-Wide Web-based service, planned for the fall, will be different than its competitors' offerings. Delphi is not going to "push a proprietary platform by adding a Web browser as an adjunct," he said.

Led by Prodigy, other on-line services companies have recently given subscribers the ability to hop on the Internet.

Delphi's service, Baratz said, will "wrap Internet modules with an integrating shell that is consistent and has an intuitive look and feel." The software modules for the interface are licensed, including Netscape Communications Corp.'s Web browser.

Delphi's strategy also includes moving its headquarters from Cambridge, Mass., to New York and undertaking an aggressive hiring campaign that has added 750 employees. Its staff size is now 950.

But there have been problems. Although it was the first commercial provider with a gateway to the Internet in 1992, delivery of Delphi's hyperlink- and multimedia-capable interface was late.



Delphi's Web services *will wrap Internet modules with an integrating shell that has an intuitive look and feel*

Observers also wonder what role Delphi will play in light of the strategic alliance between MCI Communications Corp. and Delphi parent News Corp., the media conglomerate owned by Rupert Murdoch. Three weeks ago, MCI and News Corp. said they will each invest $200 million in a joint venture to deliver electronic news, education and entertainment to consumers and businesses worldwide.

"News Corp. will be doing some exciting things with MCI," said Peter Krasilovsky, a senior analyst at Arlen Communications, Inc. in Bethesda, Md. "There doesn't seem to be a place for Delphi." He says fringe on-line players may be merged into larger entities.

Arlen Communications estimates that Delphi has 160,000 subscribers on its service.

Baratz calls the MCI relationship complementary. This relationship, however, may not include MCI as an Internet access provider; Delphi is still shopping for the best deal from a carrier.

While price details for Delphi's Web service were not available, the company said it plans a subscription-based, tiered plan that will be competitive with both on-line services and Internet access providers.



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Fore adds on-line help to net management

By Patrick Dryden

Fore Systems, Inc. has expanded the number of platforms that can run its Asynchronous Transfer Mode (ATM) network management software and added features such as scripting and on-line help.

Fore helped launch the market for ATM, a transport and switching method that carries data, video and voice in fixed-length packets for efficient high-speed communication. ATM will not achieve mainstream appeal for one to two years, analysts said.

ATM's cost, complexity and limited support for network management features have slowed its acceptance in some cases, Fore officials said.

But the company hopes to alleviate these problems with Version 3.0 of its ForeView network management software. ForeView 3.0 now integrates with SunSoft, Inc.'s SunNet Manager platform running on SunOS or Solaris. It also integrates with Hewlett-Packard Co.'s OpenView running on Solaris, joining the company's previous support for SunOS and HP's HP-UX.

A stand-alone version of ForeView can monitor ATM networks from sites that lack a network management platform. This self-contained console runs on a PC under Microsoft Corp.'s Windows NT or on a workstation under one of three Unix versions. Prices start at $2,495 for the Windows NT version and $4,995 for the Unix version.



With this setup, users who are building and connecting bigger ATM LANs can have complete network management without expensive consoles, according to Steven Hand, manager of software development for network management at Fore in Warrendale, Pa.

All versions of ForeView 3.0 include three enhancements — scripting, inventory tracking and on-line help — demanded by users whose ATM networks have grown, Hand said.

For example, the ATM LANs in six graduate engineering schools throughout the Oregon State University system have reached 20 to 30 workstations each, said Dave Meyer, senior network engineer at the Eugene, Ore., campus. They have not yet begun to add PC stations.

Just more than a year old, the network operates at 155M bit/sec. to speed bulk file transfers and engineering applications, share astronomers' images and enable videoconferencing among the six campuses.

"The scripting tool sure eases the set-up of a large network," Meyer said. This utility interacts with Fore's switches via the Simple Network Management Protocol to automate chores such as configuration and monitoring.

Keeping track

An embedded inventory management program summarizes all devices and software variations in the ATM network — down to serial numbers and node names. "Now I don't have to keep my own database or track down stickers," Meyer said, referring to how he used to need to walk over to every device to read labels for inventory tracking.

Fore included a context-sensitive reference manual with diagrams in ForeView 3.0 to assist new users, Hand said.

"On-line help is handy for keeping up with complex network management," Meyer said. "This really helps my backup manager," who does not run ForeView every day.

Remote access software gets 'net link

By Mindy Blodgett

Walker Richer and Quinn, Inc. has updated its Reflection Network Series remote access software with Internet access and extra support for connecting PCs to the corporate infrastructure.

Version 5.0 will be delivered in June at a price of $249, according to the Seattle-based company.

Users happy

Users say the upgrades have made a difference.

"This is a nice GUI interface that works really nicely," said Mark Anderson, a design specialist at 3M Co. in Minneapolis who has been using the upgraded version for a month. "It's pretty transparent, and I can run a lot of applications at once."

Grant Easton, a technical consultant for the professional services organization at Hewlett-Packard Co. in Sacramento, Calif., agreed. "It's a bulletproof stack; I can throw all sorts of applications at it without getting hung," Easton said. "I use this for both my internal use and for my customer base."

Reflection

New features of Walker Richer and Quinn's Reflection Network Series Version 5.0 include the following:

- Windows Network File System (NFS) with OLE support, to enable users to share documents across network drives.
- NFS data, directory and file caching with file transfer protocol, to improve serial links and make mobile use cheaper and more efficient.
- Client support for dynamic host configuration protocol and NetBIOS, a protocol for PC LANs, to provide printer and file redirection.
- Internet applications, include Enhanced Mosaic 2.0 and WinVN newsreader.

Easton added that Version 5.0 provides better connectivity between PC users and Microsoft Corp.'s LAN Manager.

But, Easton said, the downside is that at $249, Version 5.0's cost "may be kind of high." Upgrades will cost current Reflection users $99.

Still, Lucinda Borovick, an analyst at International Data Corp. in Framingham, Mass., said that with this product, Walker Richer and Quinn has correctly gauged the needs of the enterprise customer.

"You have a robust network platform that will provide connectivity whether you are talking about a remote user or a user at a central site," Borovick said. "The features they are bundling are certainly competitive."

Version 5.0 succeeds Version 4.2 of the Reflection Network Series and includes new features such as support for Microsoft's OLE (see box).

The Reflection Network Series for TCP supports all standard communications protocols as well as wireless protocols, including Cellular Digital Packet Data.

One-stop mobile shopping promised

By Mindy Blodgett

Enterprises planning to go wireless can now shop at one place for hardware and software that is already configured and activated for mobile use.

The Wireless Data Division of AT&T Corp.'s McCaw Cellular Communications, Inc. has joined forces with PCs Compleat, Inc. in Marlboro, Mass. The deal will mean quicker setup of hardware and software for the Cellular Digital Packet Data (CDPD) network, the vendors claimed.



Developed by McCaw in Kirkland, Wash., CDPD sends data over cellular networks.

Tom Ganser, director of channel development at the Wireless Data Division, said customers will be able to order an activated modem from McCaw that will be registered on the CDPD network. The customer could then simply hook the modem up to the laptop.

Or, a customer could send a laptop to PCs Compleat, which would then bundle in a modem, which is already set for wireless business.

As part of the agreement, PCs Compleat will offer distribution, activation and support to McCaw's end users. PCs Compleat will provide these same services to value-added resellers and wireless systems integrators that are part of McCaw's AirData Solutions program.

Briefs

Oracle, Siemens team up

Oracle Corp. plans to team up with **Siemens Nixdorf Informationssysteme AG** and its **Pyramid Technology Corp.** subsidiary in a series of European interactive television field trials this summer. They will combine Oracle's Media Server multimedia database with the Reliant RM1000 parallel server recently introduced by Siemens Nixdorf and Pyramid, according to the companies.

FCC OKs license transfer

The **Federal Communications Commission** approved the transfer of Specialized Mobile Radio (SMR) licenses from **Motorola, Inc.** to **Nextel Communications, Inc.**, a Rutherford, N.J., provider of SMR services. The FCC's decision allows Nextel to move forward with its plan to provide nationwide service to potential mobile data users such as taxicabs. Meanwhile, Nextel competitor **Geotek Communications, Inc.** in Montvale, N.J., said it had received a $10 million investment from Anam Industrial Co., a $1.5 billion semiconductor packaging vendor.

Motorola unveils protocol

Motorola, Inc. released its InFlexion two-way messaging protocol, which will give paging networks the ability to send messages in two directions. InFlexion was developed for the narrowband Personal Communications Services market created last year by an FCC auction. The new protocol can send data at up to 112K bit/sec. speeds. **Paging Network, Inc.** in Dallas, the nation's largest paging vendor, will be the first paging service to use InFlexion late this year.



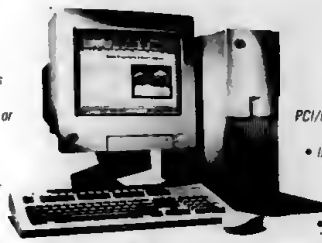
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Ungermann-Bass Networks, Inc. has announced DragonSwitch for Ethernet switching modules on UB Networks' Access/One hub.

According to the Santa Clara, Calif., company, the 16-port DragonSwitch module offers high density in a switching hub with up to 80 ports of switched Ethernet for collapsed backbones and high-speed application users. DragonSwitch modules can transfer data to other Access/One modules and other DragonSwitch modules. The modules can be configured from any Simple Network Management Protocol system and managed using the system's own IP address.

Pricing for DragonSwitch modules starts at $825 per port.

▶ *Ungermann-Bass Networks*
(408) 496-0111

Digital Link Corp. has announced Duet Encore.

Duet Encore is a Simple Network Management Protocol (SNMP) managed 56K to 64K bit/sec data service unit/channel service unit for connecting users to the Internet and frame-relay services.

According to the Sunnyvale, Calif., company, Duet Encore includes a fully-featured embedded SNMP agent and a terminal user interface for unit and network manageability.

Duet Encore is available as a stand-alone unit for remote sites and as a shelf-mounted, high-density package for central site applications.

Pricing for Duet Encore starts at $999.

▶ *Digital Link*
(408) 745-6200

MiLAN Technology has introduced two products for the single-mode fiber market: the 160T Converter and the 03F Micro Transceiver.

According to the Sunnyvale, Calif., company, the 160T Converter supports either full- or half-duplex Ethernet and converts 10Base-T unshielded twisted-pair cabling to single-mode 10Base fiber-optic cabling. The 160T does not retime data and converts cabling without adding delay to the network.

The 03F Micro Transceiver is a direct-connect transceiver that converts attachment user interface ports on workstations, adapter cards and other communications devices to single-mode fiber cabling.

The 160T Converter costs $945. The 03F Micro Transceiver costs $745.

▶ *MiLAN Technology*
(408) 752-2770

Future Communications Systems, Inc. has introduced Video Vu, an Internet videoconferencing product.

According to the Syosset, N.Y., company, Video Vu provides color videoconferencing through one- and two-way video transmission over the Internet or regular analog phone lines. Video Vu also features video electronic mail, Teletype chat and file transfer. It can also transmit live video on a World-Wide Web page.

Video Vu costs $75.

▶ *Future Communications Systems*
(516) 496-7121

TAC Systems, Inc. has announced the Hot-Swap TowerDrive, a mullistorage cabinet that can be upgraded on the fly on Novell, Inc. networks.

According to the Huntsville, Ala., company, the Hot-Swap TowerDrive can hold CD-ROM, hard, optical and tape drives in any combination. It can be configured as a self-contained hierarchical storage manager with all storage devices residing in one unit. The Hot-Swap TowerDrive comes in 7-, 16- and 32-bay models.

Pricing for the Hot-Swap TowerDrive starts at $1,200.

▶ *TAC Systems*
(305) 721-1976

Whittaker Communications has announced the 20/20 Unix Enterprise Hub Manager, a standards-based graphical network management software package for Whittaker's Enterprise Hubs.

According to the Santa Clara, Calif., company, the product lets network and workgroup managers add devices, change device configurations and monitor device status. It works with open platforms.

The 20/20 Unix Enterprise Hub Manager costs $5,995.

▶ *Whittaker Communications*
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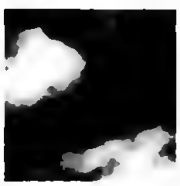
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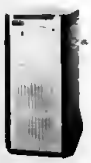
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Building a warehouse bit by bit

Approach lets users spread out expenses

By Craig Stedman

The cost and complexity of building data warehouses is pushing some users and analysts to advocate a bottom-up approach that calls for building a warehouse in department-size pieces that can be implemented quickly.

This modular approach to creating a warehouse department by department lets companies get something in place that can prove the value of warehousing to corporate executives nervous about the length and uncertain payback of an all-out project.

"We really feel that's the only way to build a data warehouse," said Robert Typanski, manager of data management at Bayer Corp. in Pittsburgh. "It just takes too big of a commitment for a company to fund a big multimillion-dollar project and have you come back in two years with the benefits."

Bayer built a warehouse in stages during the past five years, distributing the data on servers in its departments and business units. The total project cost is up to roughly $1 million, but swallowing that in bite-size pieces has been more palatable, Typanski said.

IBM embraced the modular concept this month by introducing low-end warehousing technology built around OS/2 servers and the OS/2 and Unix versions of its DB2 database. The Visual Warehouse offering can be used by small shops to build companywide warehouses, but it mainly targets departments and workgroups with up to 30 concurrent users and 50G bytes of data.

The warehouse server software, which will be released in limited shipments in mid-June, costs $24,000. A full Visual Warehouse suite, including DB2 and tools for extracting, searching and accessing data, costs about $50,000. Users should be able to complete a warehouse in two to three weeks, said Chris Arnold, vice president of data management at IBM's Software Solutions division.

IBM is not the first vendor to support "take-it-easy" warehousing. Bayer has used warehousing tools from Prism Solutions, Inc. In February, Hewlett-Packard Co. released a departmental version of its Intelligent Warehouse priced less than $100,000. "The original model of people building huge data warehouses all at once is only rarely being done now," said George Ferguson, warehousing program manager at HP.

Some information systems managers who have found it difficult to get the green light for full-fledged warehouse projects said the idea of starting small and building up over time may be easier for them to sell internally.

"It's been hard for our organization to understand why we need to spend a lot of money to crank up a data warehouse process," said Thomas Tinsley, director of IS management at the state of Tennessee's Department of Finance and Administration in Nashville. The department is reviewing a warehouse project that it hopes to complete by 1997, he added.

Maryland Casualty Co. in Baltimore put a corporate warehouse on hold last year because the estimated $1.5 million cost was too steep. Joe Olszewski, assistant vice president of data processing, said the bottom-up approach "obviously makes sense conceptually," although the company has not yet examined low-end offerings such as Visual Warehouse.

Warehouse data

Building a data warehouse piece by piece rather than all at once offers the following advantages and disadvantages, according to users and analysts

Advantages

- Bottom-up approach allows companies to begin using data warehouse sooner, providing evidence of benefits to management faster.
- Data does not have to be cleansed and standardized companywide to get started.

Disadvantages:

- Without tight controls, the process could produce a series of fragmented databases that are hard to integrate.
- Cleansing of data and development of a consistent data model can only be postponed, not put off forever.

A word of caution

While piecemeal warehousing lets companies get their feet wet without taking a full bath, users and analysts noted that the complexity of building a corporatewide warehouse does not magically go away.

They said IS managers have to be vigilant to ensure that miniwarehouses in departments can eventually be integrated under a common data model and have consistent naming.

And analysts said the ability to quickly show a return on investment is critical because full warehouses can cost millions of dollars and take a year or more to complete.

Jones keeping up with the Schwabs, Merrills

Brokerage launches $100M client/server network

By Thomas Hoffman

With its roots firmly embedded in America's heartland, Edward D. Jones & Co. has historically taken a no-nonsense approach to delivering investment services to small-town residents. Some 65% of its 3,200 branches are located in the suburbs of the nation's largest cities.

Now that the Maryland Heights, Mo.-based retail brokerage has settled on the building blocks for a $100 million client/server architecture, its decision to take a decidedly practical approach toward the rollout of its infrastructure, which will begin this month, is hardly unexpected.

Jones' approach — infrastructure before applications — contrasts with the route taken by most investment players, which has been to hop onto a hot third-party application and build an architecture around it, according to industry experts.

"We're going to take it slow here with the [rollout to the] branches for a while until our install teams get some experience in all 50 states; we don't want any surprises," said Rich Malone, chief information officer at Jones, which has more branch offices than any investment firm in the U.S. He said he expects the company to upgrade 150 of its branches by January and convert an additional 3,050 branches by mid-1997.



CIO Rich Malone *says Edward D. Jones is expected to upgrade 150 branches by January*

Halfway there

By the end of 1994, 50% of all applications used in the financial services industry in the U.S. and Canada were configured for client/server processing, placing the industry well ahead of other vertical sectors, according to a survey of 400 CIOs by Deloitte & Touche.

Tool time

The new client/server infrastructure is expected to provide the firm's brokers with more sophisticated automation tools than they have under their mainframe/character terminal environment.

"From a data management standpoint, [Jones] will suddenly be dealing with large amounts of data in 3,200 locations, so [infrastructure before applications] is a smart way to go about" the deployment, said Michon Schenck, an analyst at The Tower Group, a financial services and technology consultancy in Wellesley, Mass.

But like most of its retail brethren, such as Merrill Lynch & Co. and Charles Schwab and Co., Jones has standardized on Sun Microsystems, Inc. SPARCservers to distribute corporate data. Under the new client/server wide-area network, Jones is installing 12 SPARCservers running Sun's Solaris 2.4 Unix operating system at its headquarters. The servers will be linked via TCP/IP connections to Intel Corp. Pentium-based departmental servers that Jones' information systems staff is building.

The homegrown branch servers, each of which will run an Oracle Corp. Oracle7 relational database management system, will feed roughly 8,000 Tektronix, Inc. X Window System terminals to be used by the firm's brokers, many of whom work in single-broker branches.

Malone said his firm is deciding which mainframe applications it will downsize or purchase. Jones has started using C++ tools such as Micro Focus, Inc.'s Cobol package to help rewrite its customer prospect and portfolio systems to Unix, Malone said.

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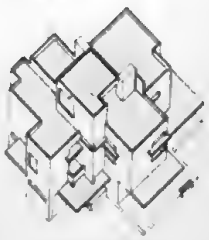
Recently, IBM was awarded best-rated UNIX system by a noted consultant, D.H. Brown.

Now we're as proud as anyone to be ranked No. 1, but we can't help but notice that other companies are being ranked No. 1, too. And proudly telling the world.

Which raises a pesky question: If everybody can be ranked No. 1, what should you look for in a UNIX partner?

Good point.

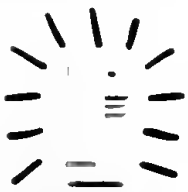
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Oldies but goodies

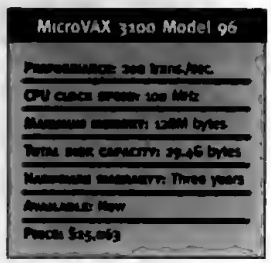
Digital VAX upgrades appeal to longtime users

By Neal Weinberg

For users who like driving their father's Oldsmobile, Digital Equipment Corp. has come out with three new models in its VAX family.

The MicroVAX 3100 Model 96, VAX 4000-160A server and the VAXstation 4000-96 workstation target longtime Digital customers who are not ready or willing to move their applications to the faster, sportier Alpha boxes.

And while VAX revenue is certainty on a downward slide, it still makes plenty of business sense for the Maynard, Mass., company to continue upgrading the hardware.



Many loyal customers said they still like the comfortable ride of the VAX systems, and the profit margins are roomy, said Jim Garden, an analyst at WorkGroup Technologies, Inc. in Hampton, N.H.

Brian Ruffner, VAX systems manager at Lubrizol Corp in Painesville, Ohio, bought a VAX 7000 last month. He said he looked at Alpha's 64-bit speed but decided that his homegrown software packages were not ready to be moved to the new platform.

Staying power

Garden said software is often a key factor in a company's decision to stick with VAX and its vast storehouse of proven applications rather than jump to Alpha, which has only a three-year track record.

While Alpha clearly comes out on top in price/performance, it sometimes falls short of VAX in risk/benefit. Garden said if a company has spent tens of thousands of dollars developing a specific application for its business and has a well-trained staff, then it might not be worth it to move those applications to a new platform.

Then again, there are always "industry laggards who want to buy the old stuff for a long time," he added.

It is crucial that Digital keeps its VAX customers happy, Garden said, in anticipation of the day when his company moves to another platform.

Many longtime users are preparing to make a switch. For example, Fovil Manufacturing Co. in Foley, Ala., is considering trading its MicroVAXes for Alphas in the next year or two, said Keith Brandt, computer services manager.

Ray K. Leaman, engineering systems supervisor at High Steel Structures, Inc. in Lancaster, Pa., said his next move will be to migrate the company's homegrown applications to Microsoft Corp.'s Windows NT, which runs on Alpha.

Slip sliding away

VAX revenue has slipped to about 12% of total product revenue, according to Digital.

"If I move systems, I'll move to Alpha. I'm not interested in VAX anymore," said Al Phillips, supervisor of systems services at Dresser Industries, Inc. in Salisbury, Md.

Phillips said he was pleased to see Digital upgrade both the VAX hardware and OpenVMS on VAX software because it shows Digital's commitment to its installed base.

But Phillips said his next stop will be an upgrade to 64-bit computing.

The new VAXs, based on the NVAX chip, offer a 20% CPU performance improvement over prior models.

Briefs

CA is in the house

Temple-Inland Forest Products Corp. in Diboll, Texas, has signed a multiyear, nationwide enterprise licensing agreement to standardize on **Computer Associates International, Inc.**'s CA-Unicenter distributed systems management software.

Cuna takes credit

Cuna Service Group Card Services in Madison, Wis., has purchased a license to use **Banc One Services Corp.**'s Triumph card processing software for its credit union operations.

Astea dispatches software

Astea International, Inc. in Chalfont, Pa., last week signed a multimillion-dollar contract to provide AT&T Global Information Solutions with its Dispatch-1 software. During the next three years, Astea will integrate its software into AT&T GIS' worldwide customer support management system, which supports approximately 10,000 service providers in 105 countries. Dispatch-1 functions include call center management, contract administration, distribution and logistics, and depot and financial management.

Bull speeds data route

Bull Worldwide Information Systems now offers its customers a way to move data off the mainframe and across the network. MainWay 2000 provides customers with a high-speed LAN/WAN infrastructure linking the mainframe with Unix and PC environments.

XDB enhances tool kit

Low-end database maker XDB Systems, Inc. in Columbia, Md., started shipping an upgrade to its XDB-Workbench development tool kit, with enhanced security and administration utilities. The kit and database, aimed at users building applications for the mainframe version of IBM's DB2 database, cost $1,500 per user.

AMS services Bells

American Management Systems, Inc. (AMS) in Fairfax, Va., announced separate contracts, totaling $125 million, to provide consulting and systems development services to BellSouth Corp. in Atlanta and Pacific Bell in San Francisco. AMS will develop billing and customer service systems for BellSouth and a new revenue collections risk management system for Pacific Bell. AMS said a third, unnamed major telecommunications company has also contracted for a new customer information management system.

Automatic banking rises

The U.S. banking automation software market is expected to more than double from $1.6 billion last year to $3.6 billion by the year 2001, according to a new study titled "U.S. Banking Automation Software Markets: From Bricks and Mortar to Bytes and MIPS" from Frost & Sullivan in Mountain View, Calif. The study concludes that the increasing use of electronic delivery vehicles such as automated teller machines will reduce the need for branch offices.

CSC manages Anglican's IS

Computer Sciences Corp. (CSC) in El Segundo, Calif., last week announced it will sign a 10-year, $300 million outsourcing agreement with $850 million Anglican Water, one of the largest water services firms in the U.K. Terms of the deal call for CSC to manage all of Anglican's information systems and to help the company migrate to a distributed client/server computing architecture. CSC said 106 Anglican Water employees will join CSC under the contract.



TRS' biometric authentication *technology uses thermograms as a security measure*

A picture's worth a thousand passwords

"A man finds room in the few square inches of his face for the traits of all his ancestors; for the expression of all his history, and his wants."— Ralph Waldo Emerson, 1860

Today, his face could also open a locked door.

Technology Recognition Systems, Inc. (TRS) in Alexandria, Va., has introduced a biometric authentication technique that it said is as accurate as fingerprinting and far less intrusive.

The technique has various applications in areas such as computer security, site security, automatic teller machine access and law enforcement, said TRS President David C. Evans at a technology demonstration.

A special camera connected to a PC reads the pattern of infrared light emitted by the unique arrangement of blood vessels in the face of the person trying to gain access. If the pattern matches the person's official "thermogram," previously recorded in the database, and the person enters the correct personal identification number, the user is authenticated.

The company claims the technique is 99.99% accurate and is generally unaffected by ambient light, weight gain or loss, plastic surgery and other factors.

— Gary H. Anthes



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Cognos Corp. has announced Impromptu 3.0, an enterprisewide, interactive database reporting tool.

According to the Burlington, Mass., company, Impromptu 3.0 gives users at all system levels fast access to corporate data and instant reports from database querying.

Impromptu 3.0's administration features include database-independent templates ranging from formatted head starts to logic-based reports, object-oriented architecture and Windows integration as a Microsoft Corp. OLE 2.0 client and server.

The product's features for end users include support for combinations of lists, crosstabs and graphs in the same report, a report scheduler and instant multidimensional data analysis.

The user version of Impromptu costs $495. The administrator version costs $595.

▶ *Cognos*
(617) 229-6600

Astea International, Inc. has announced PowerHelp 2.1 for high-volume internal help desks and external customer support environments.

According to the Chalfont, Pa., company, PowerHelp 2.1 is scalable, client/server-based help desk software. It lets customer support representatives send messages to remote pagers and palmtop computers directly from a call screen. PowerHelp 2.1 features information capturing capabilities that automate call tracking and problem identification and resolution.

PowerHelp 2.1 costs $2,500 per seat. Volume pricing is available.

▶ *Astea International*
(215) 822-8888

Sterling Software, Inc. has released VM:Migrate 1.0, a systems management product for IBM's MVS/ESA operating system.

According to the Atlanta company, VM:Migrate reduces storage costs and backup time by automatically migrating unused and infrequently used files from primary storage devices to less costly secondary storage media in a compressed state. VM:Migrate exploits VM's Hierarchical Shared File System to provide a system-managed storage environment, according to Sterling.

Pricing for VM:Migrate is based on CPU model groups and starts at $27,400.

▶ *Sterling Software*
(404) 231-8575

Dataware Technologies, Inc. has released BRS/Search 6.2, a text management and retrieval system for complex databases.

According to the Cambridge, Mass., company, BRS/Search 6.2 lets concurrent users retrieve and analyze documents from large, unstructured data collections. The system includes an indexing structure for finding information across millions of documents in multiple databases.

BRS/Search 6.2 features pattern matching for refining searches, field level indexing and conceptual searching capabilities.

Pricing for BRS/Search 6.2 starts at $9,500 for four concurrent users.

▶ *Dataware Technologies*
(617) 621-0820

Product short

Storage Technology Corp. has announced the Northfield 480 and the Northfield 440, storage devices for the IBM AS/400 and RS/6000. The Northfield 480 features 4G-byte head disk assemblies. The Northfield 440 has 2G-byte head disk assemblies. Cost: Model 480 starts at $44,625; Model 440 starts at $32,690. StorageTek, Louisville, Colo. (303) 673-5151.

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"The sheer volume of what's in it. Easy access without having to go to a library servi"

"It has information not found on Computer Select."

Source: Survey of COMPUTERWORLD CD subscribers, May 1993.

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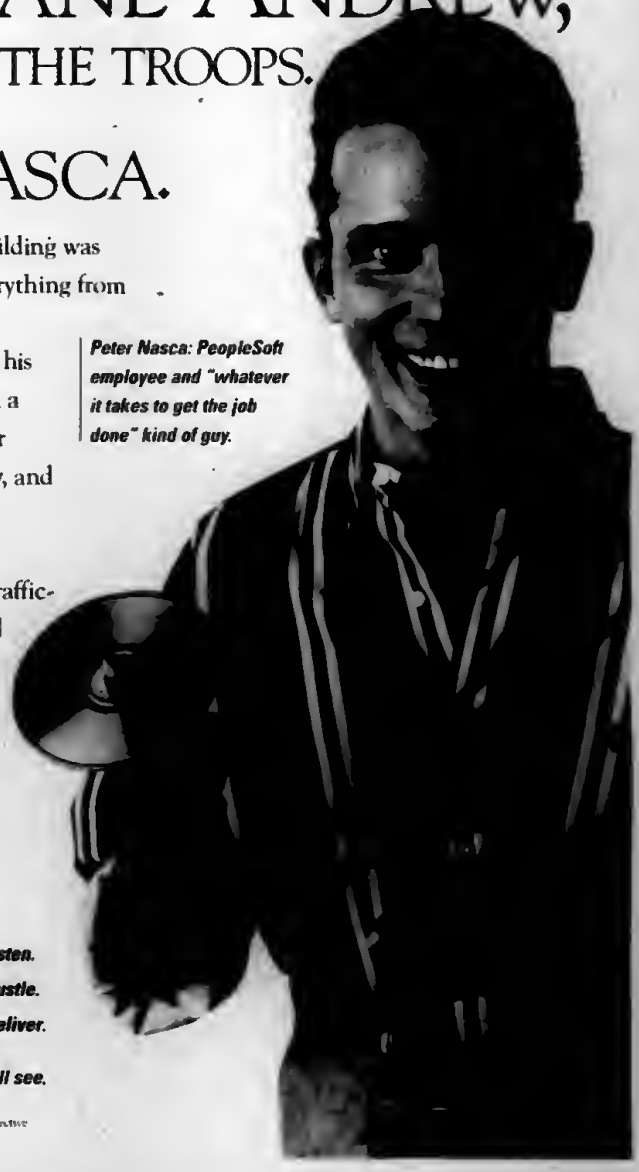
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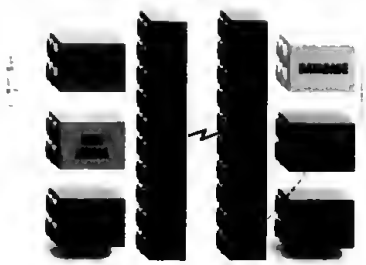
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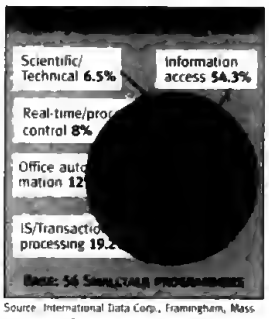
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Smalltalk makes big bid

Called language of choice for object-oriented programming

By Elizabeth Heichler

■ In the lingo of developers, Smalltalk isn't just the usual mindless chitchat. It's gaining an increasing number of boosters in the corporate world, and a new study maintains it may be the language of choice for corporations adopting object-oriented programming.



Source: International Data Corp., Framingham, Mass.

In addition to being the fastest-growing object-oriented language, with its annual growth rate close to 60%, Smalltalk received top ratings in more categories than C++, Cobol or fourth-generation languages (4GL) in a recent survey of 296 programmers by International Data Corp. (IDC) in Framingham, Mass.

In the study, paid for by the newly formed Smalltalk Industry Council, IDC surveyed four equally sized groups of programmers for Smalltalk, C++, Cobol and 4GLs. Each group was asked to rate how well the language performed in a number of categories. Smalltalk received the highest rating in 19 categories, compared with 14 for Cobol, 12 for C++ and 10 for 4GLs.

The number of months it takes to reach specific levels of competency in Smalltalk, C++ and Cobol

	Smalltalk	C++	Cobol
To write simple applications of minimal use	2.8	2.7	2.4
To code applications on a routine basis	5	5.6	4.8
To design, code and maintain applications	9.1	10.9	12
To become a recognized expert	18.2	23.2	28.1

Base: 225 programmers

Source: International Data Corp., Framingham, Mass.

The learning curve for Smalltalk may also be significantly shorter than for other languages (see chart).

For example, at First Union National Bank in Charlotte, N.C., most programmers went from the Cobol world right into Smalltalk, said systems architect Jeff Headley. Similarly, at Atlanta-based railway company Norfolk Southern Corp., longtime Cobol programmers have made a smooth transition to productive work in Smalltalk, according to information systems staff.

Smalltalk provides a higher-level interface than C++, making it easier for corporate developers to use, according to Jim Adamczyk, a partner at Andersen Consulting in Chicago. "We are going with Smalltalk because it is a higher-level programming environment. People who develop business systems don't have the same profile as people who develop word processors — they tend to be slightly less technical," he said.

Programmer productivity is also greater in Smalltalk than C++, said Doug Kittelsen, co-director of the object and architecture laboratory at software development consultant American Management Systems, Inc. in Fairfax, Va. The company built its own set of reusable building blocks that it employs when designing and implementing business solutions for clients. It offers systems implemented in both Smalltalk and C++ to its customers.

"The productivity in Smalltalk is so great, we did initial work and refinements in Smalltalk and then implemented the final product in C++," Kittelsen said. "Smalltalk is also good for very complex business scenarios that you need to model and work through."

In the study, Smalltalk ranked highest in the following categories: integration of the development environment, portability, openness, reliability, rapid development, cost-effective development and development of client/server applications.

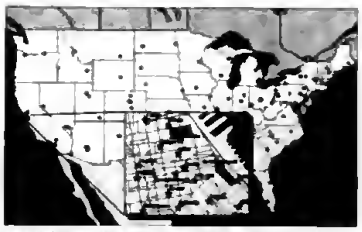
Big-time appeal

Object technology is moving into the mainstream of corporate users, who have most of their mission-critical applications written in Cobol and running on mainframes, said IDC analyst Steve McClure. Objects are appealing to this group because the technology offers better reliability, enhanced programmer productivity and easier maintenance compared with traditional programming methods, he said.

According to McClure, reliability is improved when an object-oriented language is used because the internals of each object are hidden from other elements of a software system with which that object communicates. This means designers can make changes to an object without affecting other sections of code. In traditional programs, a change in one place may have unanticipated consequences elsewhere and, as a result, cause failure.

Object-oriented programming can also improve productivity because it allows programmers to reuse existing code and incorporate off-the-shelf building blocks of code found in class libraries.

Consultants at other research firms tracking object-oriented tools agreed that Smalltalk may help companies transition to objects more easily because of its relative ease of use.



MapInfo's MapMaker *matches the address records for customers to their exact location*

Mapping the customer

By Mitch Betts

In the past, getting a huge customer database into shape for geographic analysis — a process called "geocoding" — required a big investment in batch processing, either in-house or at a service bureau.

Now, two leading vendors in the mapping software market have come out with geocoding software that can be embedded in corporate information systems so map coordinates are added to the database on the fly.

That means companies can analyze customer data on desktop mapping systems almost immediately, rather than waiting several days for batch geocoding of older data, analysts and users said.

On May 15, archrivals MapInfo Corp. and Strategic Mapping, Inc. announced geocoders with application programming interfaces (API) that allow the geocoders to be inserted in a wide variety of systems.

Geocoding is the process of assigning map coordinates to data, such as customer or store addresses, so they become points on a digital map. It requires matching the address in the database to a reference list of accurate addresses from the U.S Postal Service and street locations from the Census Bureau.

MapInfo in Troy, N.Y., introduced MapMarker, which consists of geocoding software, an address dictionary and street maps. It is available on Windows systems as well as Unix systems from Sun Microsystems, Inc. and Hewlett-Packard Co. and will ship in mid-June.

The package, priced at $10,000 for full U.S. coverage, can process 100,000 to 160,000 records per hour, MapInfo said.

Strategic Mapping in Santa Clara, Calif., spun off its Atlas Geocoder as a separate product that can be embedded in virtually any application. The geocoder processes 300,000 to 400,000 records per hour. It will be available in June, with prices starting at $2,500, the vendor said.

IS departments can deploy the geocoders to add map coordinates to an existing address as well as each time a new customer address is added to the database.

One advantage of the new geocoders is that they work from nationwide reference files that have been crammed onto a single CD-ROM, noted Jack Mohr, research associate at Dartmouth Medical School in Hanover, N.H. He uses desktop mapping to analyze health care networks.

Mohr, a beta tester of MapMarker, said the address files have been optimized for speedy processing. "I can have it running over lunch and get thousands of records geocoded at my desktop. That eliminates the hassle of getting a purchase order for outsourcing the job," he noted.

Ideally, numerous desktop users could access the geocoded corporate data from a central server rather than work from various downloaded subsets that are outdated. "A common data set is much easier for the IS department to manage," said James Rapinac, an analyst at Daratech, Inc., a market research firm in Cambridge, Mass.

Application development tools

Client/server tools users crave ease of use

By Kim S. Nash

Client/server developers, both corporate and commercial, crave ease of use above all else in their application development tool kits, according to an exclusive *Computerworld* survey.

But choosing a development tool quickly becomes a lot more complicated, the survey of 147 application developers found.

For example, Gupta Corp.'s SQL/Windows tool set has "a reputation for having a little bit steeper learning curve than its PowerBuilder rival ... but some people prefer [Gupta's product] to PowerBuilder for its stability," said Brent Williams, an analyst at Gartner Group, Inc. in Stamford, Conn.

Furthermore, Gupta, Computware Corp.'s Uniface division and other third-party tool makers have crowed that their products are more database-independent than similar tools from Oracle Corp. or Informix Software, Inc., companies that make development and database products. The bragging became particularly loud after Sybase, Inc. acquired Powersoft Corp., king of graphical development tools and maker of PowerBuilder, early this year.

Much to consider

Indeed, database independence matters. Of 147 users surveyed, 97 said they were more likely to buy development products from independent suppliers rather than their database vendors (see chart at left).

Price is also a factor. Many respondents said they get better deals on tools from third parties than from database makers. "We get a better price, and [there is] no real difference in the support," one respondent said, explaining why his company avoids one-stop shopping.

The prospect of strapping themselves into a single vendor's life vest also influenced this group. That is, splitting database and tools purchases among multiple suppliers gives users more confidence that they are getting the best products for the best price, users said.

As one respondent said, "I don't like to be set up and stuck with one supplier."

Interestingly, users did not scream for application partitioning — the capability of a development tool to split program logic between server and client. Though observers have said partitioning is a key feature for building enterprise-caliber client/server applications, just 13% of respondents ranked the capability as "very important."

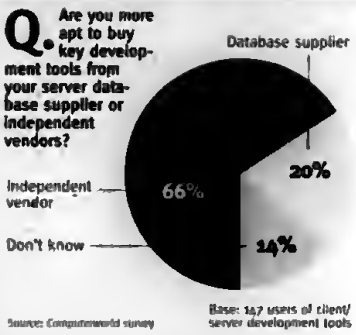
Thirty-three percent said partitioning is "not important at all."

Partitioning "is one of those future technologies that a lot of people talk about but may not be ready for," said Jeffrey Jacobs, president of Jeffrey Jacobs & Associates, an Oracle consulting firm in Belmont, Calif.

Many information systems shops building client/server systems are just beginning to encounter a need for dividing application logic after a long phase of experimenting with client/server, Jacobs explained.

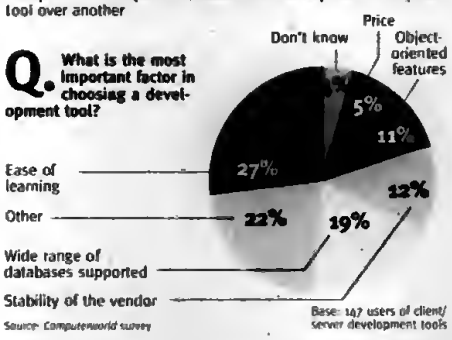
By this time next year, partitioning is likely to be a key factor influencing tools purchases, he said.

One-stop shopping unappealing



It's only money

Low price is not a powerful inducement to buy one development tool over another



Coming attraction

Informix Software is due to add application partitioning capabilities to an upgrade of its New Era development tool in July.

IRI launches 'sexy slice-and-dice' tool

Firm overhauls client piece of decision-support software

By Rosemary Cafasso

IRI Software in Waltham, Mass., last week rolled out a redesigned front end for its line of decision-support and executive information systems (EIS) software intended for both novice and power users.

The front end, called ExpressView, was designed to let users navigate through masses of data. The Windows-based software can be used by itself — it ships with a back-end database — or with IRI's other query and analysis software that runs on a variety of platforms, including Unix versions and MVS.

ExpressView is available for users who know little about data query and analysis as well as power users willing to program. Novice users can navigate through front-end tasks with the aid of graphical prompts. Meanwhile, power users can select menu options to program or assemble components for specific tasks such as report generation.

A professional developer's version called ExpressBuilder will be available later this year, company officials said. This version will replace the company's EIS offering in that it will allow users to create their own full-blown applications.

Power to power users

Several ExpressView beta testers said the software should be particularly helpful to power users who want to get at data without having to wait for the IS department to assist them.

IRI's ExpressView

Price: $1,295 per user
Availability: Now
Key features: Microsoft Corp.'s OLE 2.0 and Open Database Connectivity support, 32-bit Windows 95-ready, object-oriented approach that allows users to modify reports by dragging and dropping icons.

Reno Air in Reno, Nev., has been using IRI's EIS and decided to beta-test ExpressView. Charles Mees, director of MIS, said he expects the software to be a time-saver.

"We have a small IS department," Mees said. "We have several [business] analysts that monitor profitability of the company through the EIS, and they have requirements for special reports and briefings. ExpressView gives them the ability to write them on their own, which reduces our workload considerably."

Some analysts said ExpressView should help IRI better compete with other decision-support software vendors.

"They needed to have a sexy slice-and-dice tool, and ExpressView will provide that," said John Faig, a senior analyst at Meta Group, Inc. in Stamford, Conn.

Greg Faust, decision-support systems manager at British Colombia Telephone in Burnaby, British Columbia, is another user expecting big time-savings from ExpressView.

"We don't have time to train armies of users," Faust said. With ExpressView, business analysts can be "very functional" with a half day of training to perform their own data analysis routines, he added.

Briefs

OMG extends object standard

New extensions may make the Object Management Group's (OMG) Common Object Request Broker Architecture (CORBA) standard more useful to corporate information systems. For one, a link has been added to allow CORBA to communicate with the Smalltalk language. Also, an object query specification will make it easier for CORBA-compliant applications to access and move data stored in either relational or object-oriented databases, according to the Framingham, Mass.-based organization.

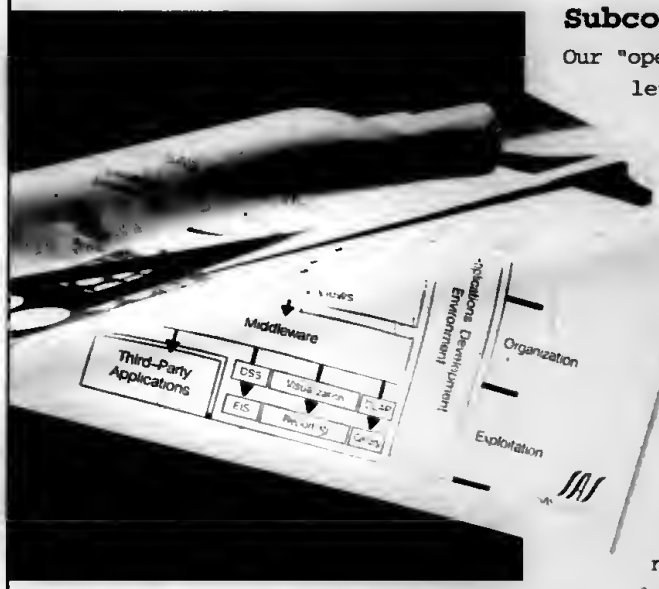
KPMG, Integral form client/server team

KPMG Peat Marwick, a global professional services company, and Integral, Inc., last week announced a strategic alliance that will enable customers in the public sector and the education arena to integrate the two companies' client/server software offerings. Terms of the deal call for KPMG, which markets financial applications for government and education users, and Integral, a provider of human resource software, to co-market each other's products and services.

SHORT TAKE Visigenic Software, Inc. in San Mateo, Calif., announced plans last week to bundle Open Database Connectivity (ODBC) drivers for IBM's DB2 databases with Visigenic's ODBC driver set, starting next quarter.

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John Snyder

Simplify, simplify

I have been hearing that the RISC vs. CISC processor battle is over and that nobody won. People say RISC never adhered to the RISC theory, and CISC processors are becoming RISC-like.

As a seasoned assembler programmer, I had a definition of RISC before the concept was invented — a processor was "simple" if I could code its assembler from memory without referring to an operation code manual. I've worked with many high-level languages and observed their evolution. I consider myself an objective evaluator of languages and related tools, but I confess a practical bias toward development environments that offer professional opportunities.

Lately, trends toward visual programming, event-driven code and object-oriented development have resulted in a major shift in programming methodology, which seems analogous to the RISC vs. CISC competition. But in contrast to the hardware world, we are moving from "RISC programming" to "CISC programming." The consequences are dramatic.

Consider traditional languages such as Fortran, Cobol, Basic and C. All have pros and cons, but they share one strong characteristic — you can code them from memory because they have limited syntax, few reserved words and simple extensibility. You need to look up only the special commands and functions. It's a cut-and-paste world where every new program is cloned from an old one.

You don't reinvent the wheel, you just copy it over and over. When you need to code the unique data and logic associated with an application, you can do it off the top of your head. Your relationship with each program is intimate and as a result, efficient. Sounds like RISC to me.

Now, with C++, Smalltalk and various 4GLs based on object-oriented programming theory, there's no more cut and paste. It's a "recycle" coding world. Development environments come with toolboxes of objects that make function libraries look like a hammer and screwdriver. You need the browser tool just to poke around in the toolbox. And object-oriented programming extends the language by inventing new tools, data types with encapsulated properties and methods.

> It's a cut-and-paste world where every new program is cloned from an old one

With these languages, we are given a huge number of canned "op codes" and encouraged to create more. Programmers construct programs rather than write them. There are no more intimate relationships. Sounds like CISC to me.

Am I missing the point? No, just being practical. The inefficiency of reinventing the wheel has been replaced with maintaining wheel repositories for all the various shapes, sizes and colors. It's not more productive to use existing code if you can't find it or if you spend more time managing, finding and understanding it than it would take to code from scratch.

One theory is that CISC languages help weak programmers. Does anyone really believe that anymore? Another theory is that programmers should benefit from automation, just as users do. I think the way to automate programming is to take care of the time-consuming, tedious work the way visual programming environments do. If they are object-oriented (today most are not), so much the better.

Object-oriented programming is not a bad thing. We don't write many monolithic batch processing programs today. We write interactive, event-driven programs for client/server systems with graphical user interfaces. RISC languages are no longer suitable because they don't have the facilities to solve today's software problems — not because they are too simple. CISC languages have the right paradigm but are too complex.

We need object-oriented programming with fluency. It's as simple as that.

Snyder is a principal at Electronic Services Management in Rockville, Md. He can be reached via CompuServe at 73765,1510.

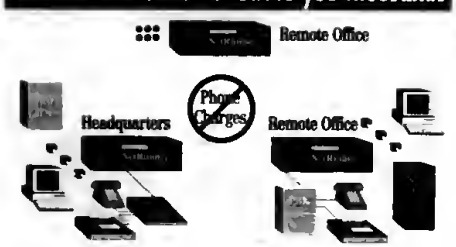
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Popkin Software & Systems, Inc. has announced System Architect 3.0 for OS/2 Warp, a repository-based application development tool.

According to the New York company, System Architect 3.0 for OS/2 Warp features support for multiple structured analysis and design. It also includes data modeling, object-oriented and business process re-engineering techniques.

Pricing for System Architect 3.0 for OS/2 Warp begins at $1,795 for a single-user license and $3,790 for the first two copies of the networked version.

▶ *Popkin Software & Systems (212) 571-3434*

Intellicorp, Inc. has introduced Object Management Workbench (OMW) 3.1 and Kappa 3.1.

According to the Mountain View, Calif., company, OMW 3.1 is an object-oriented analysis and design tool that lets large groups create logic-intensive applications and provides multideveloper support. OMW 3.1 diagrams and models are active and executable at each stage of the development process and can be incrementally modified.

Kappa 3.1 is a visual development environment featuring graphical user interface component classes and C++ integration. It supports symbolic debugging of object code.

OMW 3.1 and Kappa 3.1 were designed to give administrators a framework for merging different versions of a domain.

Pricing for an OMW 3.1/Kappa 3.1 pack begins at $10,000. Volume pricing is available.

▶ *Intellicorp (415) 965-5500*

Blyth Software, Inc. has announced Omnis 7', a cross-platform development product.

According to the Foster City, Calif., company, Omnis 7' lets developers create an application once and deploy it on a range of platforms using a single source code base. Omnis 7' uses the native graphical user interface of the operating environment without requiring the developer to recode for supported platforms.

Omnis 7' supports all available Windows platforms.

Pricing for Omnis 7' begins at $5,000.

▶ *Blyth Software (415) 571-0222*

Sterling Software, Inc. has introduced Key:Advise, on-line methodology for guiding application development projects.

According to the Atlanta company, Key:Advise gives project participants methods and techniques at each stage of the development process. It includes a methodology library of project paths including client/server development, business process re-engineering and purchased application selection. The product also includes management and technical views of methodology content.

Pricing for Key:Advise starts at $10,750 per seat; volume pricing is available.

▶ *Sterling Software (404) 231-8575*

Bytech Business Systems, Inc. has introduced PrintWorks, a custom control for Mierosoft Corp.'s Visual Basic.

According to the Pomona, N.Y., company, PrintWorks lets users create, preview and print documents. It uses a Windows Dynamic Link Library to process documents and a graphics library to let users create drawn outpnt. It works directly with the Windows application programming interface printing functions, which allows the nse nf any type of Windows printer.

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COMPUTERWORLD'S JOB SATISFACTION SURVEY NINTH ANNUAL

Are we having fun yet?

PROACTIVE COMPANIES SAY 'YES!'



Like other survey respondents, FRANK GUZZARDI, a senior programmer/ analyst at HServ, Inc., is motivated by "working on cutting-edge technology."

CONTINUED FROM COVER 1

"Our company is very technolngy-oriented," Smith says. The 14 members nf his IS department are satisfied with their work, he says, largely because they are being given "more training and challenging technnlogy exposure." For Smith, the challenging wnrk, recngnitinn and hi[illegible]ary and bonus keep him satisfied.

Overall, jnh satisfactinn increased slightly this year over last year, after several years nf declines, as did the number nf IS workers whn say they are working tn their full potential, the *Computerworld* survey fnund.

This year, 71% nf the 571 respondents said they were satisfied with their jnhs, compared with 68% in 1994. Of this group, senior fS executives and IS middle managers reported the

Job satisfactinn, *page 82*

Top 3 MOTIVATORS

- CHALLENGING PROJECTS
- JOB SECURITY
- THE WORK ITSELF

10%

MORE IS PEOPLE THIS YEAR THAN LAST SAY THEY ARE WORKING TO THEIR FULL POTENTIAL.

WHAT HELPS THEM

- Successful implementation of new technologies, greater challenges
- Improved training, increased training budget or learning new skills
- Commitment to good service and customer satisfaction

71%

OF RESPONDENTS ARE SATISFIED WITH THEIR JOBS, but 41% say their level of satisfaction has decreased since last year.

COMPUTERWORLD'S JOB SATISFACTION SURVEY NINTH ANNUAL

IT'S NOT THE ECONOMY, STUPID

Nonmanagement IS are the least worried about the economy as a stress factor (2.8%), compared with senior IS execs and IS middle managers, but they are the most concerned about JOB SECURITY, ranking it as their topmost effective motivator.

NONMANAGEMENT IS MAY GET WHAT THEY WANT.

55% **of senior IS execs expect their company's investment in IS training to increase in the next year.**

45% **OF NONMANAGEMENT IS SAY JOB SATISFACTION IN THEIR DEPARTMENT IS DECLINING, and they cite increased workload, low pay and stress as the top villians, followed closely by layoffs, downsizing and leadership problems.**

CONTINUED FROM PAGE 81

greatest increases in satisfaction, whereas satisfaction for nonmanagement IS professionals stayed roughly the same.

Stress is higher than it was last year for most people, and that is primarily attributed to heavier workloads and greater demands on IS departments from business units. But a closer look at survey details and interviews with respondents reveals that one person's dream assignment can be another person's job from hell.

Where work demands have increased and IS staffers are not being trained in new technologies or recognized for their contributions, they also are experiencing greater amounts of stress.

Re-engineering woes

Of all IS respondents, middle managers were more likely to say IS failures contributed to their stress than senior executives or nonmanagement IS. This may be a result of re-engineering, which has forced many middle managers to concentrate on technology rather than administrative duties, which might have been the focus of their jobs in the past, according to Richard Wonder, national director of the IS division at Robert Half International, Inc. in New York.

Additionally, as re-engineering evolves, some middle managers are being squeezed out, and it is frequently difficult for them to find new jobs, Wonder says.

"Everyone is working harder, smarter and being asked to fill multiple functions, and I think that has affected middle managers," he says.

The stress has become so great for some that they are leaving the IS field entirely, says Bud Huber, manager of strategic planning at Hughes Aircraft Co. in El Segundo, Calif.

Job satisfaction, *page 84*

NONMANAGEMENT IS: Give us a chance!



Jay Kalter says he doesn't understand why his bosses at Tesseract Corp. would consider hiring outside consultants to do client/server development work he believes he could do — if he had the training and the opportunity.

Those two issues, lack of training and lack of exposure to new technologies, are precisely the reasons many nonmanagement IS professionals who responded to *Computerworld*'s Ninth Annual Job Satisfaction Survey say their level of job satisfaction is decreasing.

Year after year, more nonmanagement IS professionals who respond to the survey rank their job satisfaction lower than senior IS executives or middle managers, their performance lower and their stress higher. The main ingredients the IS rank and file would prescribe for themselves to turn things around, the survey found, are a hefty dose of new technology challenges, the training to meet those challenges and job security.

Kalter, like 82% of the nonmanagement IS staffers who responded to the survey, is satisfied with his choice of profession. He rates his direct supervisor's management skills as "excellent." Similarly, nearly 71% of nonmanagement IS say their immediate supervisor's management capabilities are good, very good or excellent.

Kalter sees problems for IS professionals like himself, though, who want to keep up with current technology but are stuck using only their skills in mainframe development. His company, which markets human resources management systems, plans to move from mainframe-based products to distributed systems. Kalter wants to be part of that move but fears the education he needs will not be available within his company.

"I think there is a real lack of commitment to training, and it's industry-wide," says Kalter, whose duties as an executive consultant include going to the IS departments of the San Francisco-based company's customers to help them with the technical installation of payroll management and benefits management systems.

"Management would rather hire contractors and pay them an hourly rate instead of training their own people. It doesn't seem cost-effective, and good people leave because they see a lack of opportunity to develop their skills," explains Kalter, who has been a Tesseract employee for six years.

Commitment breeds enthusiasm

Daniel F. Consolati, a senior systems analyst at GE Plastics in Pittsfield, Mass., is similar to Kalter in many ways. Both are satisfied with their choice of careers, their companies and their supervisors. Both are seeing their IS departments move from mainframe-based to distributed systems.

The difference? Kalter is not sure he will be directly involved with the move, and Consolati knows he will be.

"The business I am in is different every day," Consolati says enthusiastically, explaining that the application for which he is responsible will be running on 300 new PCs, a Unix server and a database from Sybase.

Richard Wonder, national director of the IS division at Robert Half International, an IS recruiting firm, is not surprised by the frustration some nonmanagement IS professionals are feeling. "I would say categorically that people with experience on legacy systems who are not being retrained will be disturbed by that," he says.

Overall, however, the survey reflects positive news. Most nonmanagement IS professionals are pleased with their choice of profession, like their jobs and their bosses and are very interested in new technology. With the benefits of training on new technologies and access to cutting-edge tools, companies are likely to gain employees who are more motivated, more satisfied and more productive. *—Candee Wilde*



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IS MIDDLE MANAGERS: High & dry?

More than two-thirds of IS middle managers are satisfied with their jobs, but 42% say they were more satisfied last year. The top reasons for the decline, they say, are increased responsibilities and increased workload. Middle managers are less thrilled with the management capabilities of their direct supervisors than their IS associates are. Only 30% rate their bosses as very good to excellent, compared with 40% of nonmanagement IS professionals and 49% of senior IS executives. The management skills they would most like to see more of in their bosses? Communications skills and technical nxpertise.

CONTINUED FROM PAGE 82

Competent, overworked people eventually approach burnout, Huber says. "It used to be they would go dormant for a while. But for the past 18 months to two years, I'm seeing more and more complete withdrawals from [information technology]."

One person, he says, left IS to go into the furniture manufacturing business, and another "is talking about being a mechanic in a motorcycle shop. These are well-respected people with a high level of technical competence who are removing themselves because they don't want to deal with the rate of change and churn in the industry."

But these are the exceptions. An overwhelming majority of survey respondents (84%) say they are satisfied with their decision to work in IS. Only 2% say they are dissatisfied. Furthermore, 41% of all survey respondents say job satisfaction in their company's IS department is stable, and another 26% say it is improving. Only one-third say it is declining.



Exposure to new technology is the leading reason given for increased job satisfaction, followed by increased responsibilities, authority or freedom in decision-making. This correlates to a quality most respondents say they value in an IS manager — a willingness to defer to knowledgeable subordinates.

Employee focus pays off

M. Lewis Temares, vice president and chief information officer at the University of Miami in Coral Gables, Fla., encourages his staff to speak with vendors about new technology and share the most interesting findings with him. He also says he gives employees decision-making power.

"I can't be bogged down with petty stuff like 17 approvals and 14 OKs for someone to take a user to lunch," he says.

Perhaps most important, Temares values his employees and praises their work.

"My staff understands that I believe people make things happen — not technology," he says. "Technology changes every day of the week."

Creating an open and interesting environment seems to be paying off at the Florida university, even though the 161 people in the IS department face the same challenges affecting most organizations — rapid change and increased cost-consciousness.

"I have made a commitment to them that I will not terminate anyone [in the name of] rightsizing until every nonpersonnel expenditure is eliminated to its limit," Temares says. "We can work together to figure out a way to save our brethren's jobs."

Temares says the level of job satisfaction among his employees has improved in the past year since he has put more focus on training and job security. Performance is now excellent, he adds.

If the University of Miami's training payback experience is any indication, 1996 may show greater gains in IS performance and satisfaction. The majority of senior IS executives (55%) responding to this year's survey say they expect their company's investment in IS training to increase in the next 12 months.

University of Miami IS personnel are being trained in Powersoft Corp.'s PowerBuilder application developer and on the Sybase, Inc. database. Client/server applications are being introduced slowly, and IS staff members are rotated among positions that use different technologies in an effort to broaden their skills base.

Among survey respondents who said satisfaction had decreased, the primary reasons given were lack of recognition, lack of direction and increased responsibility. The survey results indicate that benefits similar to those enjoyed at the University of Miami's IS department would have a positive effect on morale for many IS groups.

For instance, nearly 25% of those who said their level of satisfaction was declining also said new management philosophy and moving into new or different technology would improve their satisfaction. New challenges and responsibilities, growth and teamwork in the department and the opportunity to use one's own ideas also ranked high.

The single most effective motivator, chosen by nearly 23% of all respondents, was "assignment to more challenging projects." Job security was chosen by nearly 21%, and "the work itself" was chosen by 18%. Less than 13% chose salary increases, and less than 4% said performance bonuses would be the best way to motivate the department.

"Bonuses and more money do perk me up a little bit," admits Frank Guzzardi, senior programmer/analyst at FiServ, Inc. in Arlington Heights, Ill. "But working on cutting-edge technology is very motivating and challenging."

But when an IS department is stretched too thin, the motivation and satisfaction gained from working with new technology evaporates.

Work difficulty underestimated

The 20 workers in the IS department of CAMP Systems, Inc. face additional stress this year as work demands increase. CAMP Systems, which stands for "Computerized Aircraft Maintenance Program," has been implementing new technologies while maintaining legacy systems — without a corresponding increase in staff, says Paul Wagenbach, vice president of information services at the Ronkonkoma, N.Y.-based company.

The IS department recently developed a graphi-

Job satisfaction, *page 86*

62% of both nonmanagement IS and middle managers say STRESS LEVELS in their companies' IS departments are up over last year. INCREASED WORKLOAD was the runaway top culprit, followed by variations on the theme – escalating demand from business units and staff reductions.

WITH STRESS LEVELS RISING IT SHOULD COME AS NO SURPRISE

3rd THAT THE MOST CITED REASON for a person to leave the IS department, middle managers say, is A DESIRE TO ESCAPE the stress and pressure of a current position. Better opportunities for career advancement and better pay were listed as first and second, respectively.

IMPROVED USE OF NEW TECHNOLOGIES ranked as the most often cited factor for increasing job satisfaction in middle managers' IS departments, ahead of opportunities for advancement and even salary.

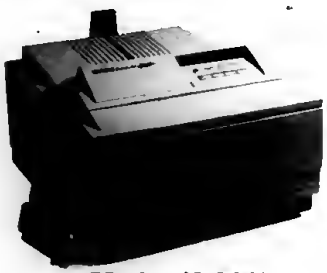
In the past several years, more and more IS middle managers have said they are working to their full potential. In 1993 34% said they were giving their jobs their best effort. In 1994 that number climbed to 38%, and this year

42%

OF IS MIDOLE MANAGERS SAY THEY ARE WORKING TO THEIR POTENTIAL.



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SENIOR IS EXECS: Staying put

Most senior IS executives are satisfied with their jobs (79%), and they are more satisfied than IS middle managers or nonmanagement IS. The leading causes for increases in satisfaction, they say — and 34% of them are more satisfied this year than last — are exposure to newer technology and new projects. With all this satisfaction going around, senior IS executives have the least desire to change jobs out of the three groups, and it may be because they feel more fairly compensated than the other two. When their IS departments suffer reductions in staff, and the accompanying ramp-up in workload comes their way, IS executives are more likely than IS middle managers or nonmanagement IS to receive higher pay and/or promotions.

CONTINUED FROM PAGE 84

cal user interface front end for its 3270-based applications and is installing a LAN — work that is new and interesting to the group, he says. As IS staffers work on this, however, they continue running batch work on the mainframe, says Wagenbach, who has been vice president of IS for 10 years.

"People don't understand the difficulty of producing this work. The perception has been, 'You have a computer, just push a button and it will get done.' That's frustrating," he says. Despite these challenges, Wagenbach describes himself as very satisfied with his work, with no desire to change jobs.



Many people at all levels of the IS hierarchy feel the difficulty of their work is underestimated. Yet two-thirds of respondents feel the IS department is as well treated and compensated as other departments in the company, such as engineering, manufacturing or sales. That percentage drops, though, when PC end-user support staff are singled out, with 40% of this front-line group saying their department is not as well treated as other departments.

Maintaining respect a challenge

For the past year, Anthony Thornley at Qualcomm, Inc. has had the good fortune to head an IS department that he says is highly regarded within the company. But maintaining this respect is a challenge, he says, even though Qualcomm, a San Diego-based company that makes wireless telecommunications equipment, is in the technology business itself.

"I think it is difficult for most people, even those who are technically oriented, to understand the difficult challenges that IS faces," says Thornley, who is chief financial officer and in charge of IS.

IS departments "are asked to do everything and cannot possibly deliver on the demand, so they are always falling short. There isn't too much tolerance for that," he says.

Despite these frustrations, when responding to the survey, Wagenbach and Thornley both ranked their own department's performance as a 4, or very good, on a scale of 1 to 5, as did 41% of the survey respondents. About 36% said their department's performance was good, 13% said fair, and just over 1% said poor. About 9% rated their department's performance as excellent.

The top reasons cited for better performance were improved implementation of new technologies (nearly 20%), followed by better training or an increase in the training budget (nearly 18%). Those who say performance in their IS department is stable attributed it primarily to dedicated, motivated, experienced workers (nearly 31%).

Most people who see their IS department performance declining blame reductions in personnel (31%), overwork and project delays (31%) and lack of leadership or support from management.

It is important to note that in a survey in which the numbers tend to move only slightly from year to year, the number of respondents who say they are working to their full potential was up 10% this year, compared with last year. In 1995, 45% said they are working to their potential, compared with 34% in 1993 and 35% last year. Among those not working to full potential, the leading cause was overwork, followed by a need for more training, budget constraints and limited resources and lack of direction.

Those who say they are working to their potential point to successful implementation of new technologies and greater challenges (20%); improved training, increased training budget or learning new skills (18%); and commitment to providing good service, professional pride and customer satisfaction (15%).

Thornley credits the atmosphere senior management has created throughout Qualcomm for the high level of performance and satisfaction that exists there.

"You can associate the phenomenon with the leadership of the company," he says. "Here, they are aggressive, committed businesspeople with a very good understanding of technology. But they are also very people-oriented. I think it's essential to create a positive environment for people to work in."

Survey results also suggest that "a positive environment" pays off — in increased satisfaction, performance and motivation. ■

Wilde is a freelance writer in Easton, Conn.

47% OF SENIOR IS EXECS SAY THEY ARE NOT WORKING TO THEIR FULL POTENTIAL. HERE'S WHY:

- **Budgeting constraints/Limited resources**
- **Views not solicited or recognized**
- **Too much work, too little time**

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Senior IS execs rate the performance of their companies' IS departments significantly higher than IS middle managers or nonmanagement IS rate them.

14% of senior IS execs say performance is excellent, and only 5% give IS a fair or poor rating . . .

. . . compared with IS middle managers, of whom only HALF AS MANY report an excellent rating (7%), and nearly THREE TIMES AS MANY report a fair or poor rating (14%).

And the GAP WIDENS still more when you ask nonmanagement IS, of whom only 5% say performance is excellent, but 24% list IS performance as fair or poor!

Are senior IS execs out of touch?

SURVEY RESPONDENT PROFILE	NONMANAGEMENT IS	IS MIDDLE MANAGERS	SENIOR IS EXECUTIVES
AVERAGE AGE	38	42	45
GENDER	78% Male 22% Female	82% Male 18% Female	91% Male 9% Female
AVERAGE YEARS IN CURRENT POSITION	4.6	5.6	7



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Calendar

JUNE 11-17

International DB2 Users Group Seventh Annual North American Conference. Orlando, Fla., June 11-15 — Theme: Star of the Enterprise. Seminars include "Tuning Very Large DB2 Systems," "Replication in Mixed Database Environments" and "Client/Server — What Really Works." Contact: International DB2 Users Group, Chicago, Ill. (312) 644-6610.

NETSEC '95 (Network Security in the Open Environment). New Orleans, June 12-14 — Seminars: "Telecommunications Fraud and Toll Abuse — How Costly Is It?" "How Hackers and Phreakers Enter and Leave Your System," "Laws That Are In Place To Protect You: What Do They Mean?" and "Tip-offs That Can Alert You To Potential PBX Fraud." Contact: Computer Security Institute, San Francisco, Calif. (415) 905-2626.

IT Services Week 1995: Third Annual IT Outsourcing Conference. San Francisco, June 12-15 — Themes: Redefining the Corporation (June 12-14) and 11th Annual Third-Party and Multivendor Maintenance Conference: Trends and Issues (June 14-15). Contact: Frost & Sullivan, Santa Clara, Calif. (800) 256-1076.

Omicron/Vendor Forum — Business Process Reengineering: Methodologies and Other Resources. Morristown, N.J., June 14 — Topics include measuring the return on investment from business process re-engineering efforts, implementing required organizational culture change, specific industry and process results, interaction with available information technology and business tools, change management and quality assurance capabilities. Contact: Omicron, Mountain Lakes, N.J. (201) 335-0240.

JUNE 18-24

45th Annual Group Health Institute. San Diego, June 18-21. Theme: Building on a Legacy of Health Care Leadership. Topics include applications for managed care, electronic data interchange between payers and providers and building clinical data repositories. Contact: Group Health Association of America, Washington, D.C. (202) 778-3225.

Object-Oriented Technology: Programming and Databases. Ann Arbor, Mich., June 19-23 — Attendees will learn how to evaluate the effectiveness of object-oriented technology and how to prototype applications. The course presents the new object-oriented paradigm analysis, design and implementation using the C++ language to promote software reuse and ease of maintenance. Contact: Engineering Conferences, The University of Michigan, Ann Arbor, Mich. (313) 764-8490.

13th Annual PC Expo. New York, June 20-22 — Keynote speaker: Eckhard Pfeiffer, president and chief executive officer of Compaq Computer Corp., will discuss "The PC: A Universal Tool for Home and Business." Contact: Blenheim Group USA, Inc., Fort Lee, N.J. (201) 346-1400.

Communications Fraud Control Association. Tenth Annual Meeting and Conference and Second Annual Exhibition. San Francisco, June 20-23 — Focus will be on international telecommunications fraud and law enforcement issues. Speakers will include representatives from Scotland Yard, U.S. Secret Service and U.S. Army Office of Special Investigations. Contact: Communications Fraud Control Association, Washington, D.C. (202) 296-3225.

Financial Management for Data Processing National Conference. Orlando, Fla., June 20-23 — Focus will be on the educational needs in information systems financial management. Seminars include "Chargeback and IS Cost Accounting: Mainframes, Networks and Distributed Environments," "IS Financial Management: Introduction for CIOs and CFOs," "Asset Management: How To Do Better Deals Through Contract Negotiations," "IS Financial Benchmarking: Internal and External Peer Analysis." Contact: Financial Management For Data Processing, San Francisco, Calif. (415) 731-3706.

Retail Systems '95. Chicago, June 20-23 — Topics include marketing information networks, PC-based point-of-sale systems, data warehousing applications, vendor-managed inventory programs and marketing on the Internet. Contact: Retail Systems '95, Newton, Mass. (617) 527-4626.

LAN SEC '95. Washington, June 21-23 — Seminars include: "Building Firewalls and Connecting to the Internet: Security," "Single Sign-on Solutions and Tradeoffs," "Client/server Security," "Establishing a Secure Network Architecture," "Securing NetWare V3 and V4" and "Implementing and Securing Wireless and Cellular LAN Technology." Contact: MIS Training Institute, Framingham, Mass. (508) 879-7999.

JUNE 25-JULY 1

Healthcare Information Systems Conference and Expo. Washington, June 25-28 — Focus will be on the latest developments in IS for patient care, managed care, systems integration, point-of-care, telemedicine and community and enterprise health information networks. Contact: Inside Healthcare Computing, Oxnard, Calif. (805) 984-8500.

Achieving Excellence in MIS Through Total Quality Management (TQM). Washington, June 26-28 — A three-day seminar on how to implement a TQM program within IS. Fees: $1,095 for non-American Management Association (AMA) members, $1,395 for AMA members. Contact: AMA, New York, N.Y. (800) 262-9699.

Third Annual International Environmental Visualization Exposition. Research Triangle Park, N.C., June 26-28 — Focus will be on innovative computer graphics education programs and the use of computer graphics as a tool for environmental science research. Contact: Kerstin Felske, Lockheed Martin, Bay City, Mich. (517) 894-7089.

Channels for Change: International Network of Women in Technology Conference. Santa Clara, Calif., June 27-28 — Contact: International Network of Women in Technology, Sherman Oaks, Calif. (818) 990-1987.

On Demand Digital Printing and Publishing Strategy Conference and Exposition. New York, June 27-29 — Contact: John V. Galicz, Exposon Management Associates, Inc., Fairfield, Conn. (203) 256-4700.

JULY 9-15

The Association for Work Process Improvement's 1995 Forum and Exposition. Fort Lauderdale, Fla., July 9-12 — Contact: Linda Cooper, executive director, The Association for Work Process Improvement, Boston, Mass. (617) 426-1167.

The MIT Executive Short Course for Chief Network Officers. Cambridge, Mass., July 10-14 — Theme: Managing the Information Technology Network for Global Competitiveness. Focus is on the strategic role of telecommunications in global organizations and the challenges chief network officers face in building and managing network infrastructures. Contact: Executive Education Short Courses, MIT Sloan School of Management, Cambridge, Mass. (617) 253-7166.

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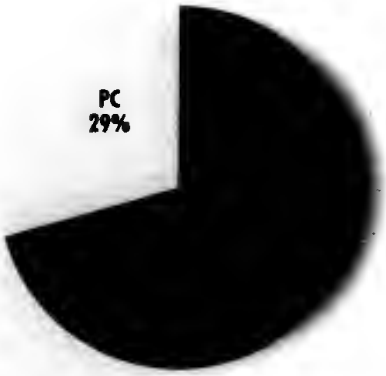
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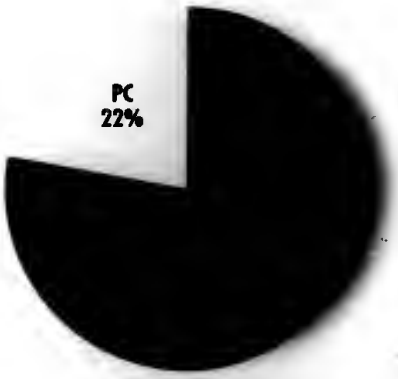
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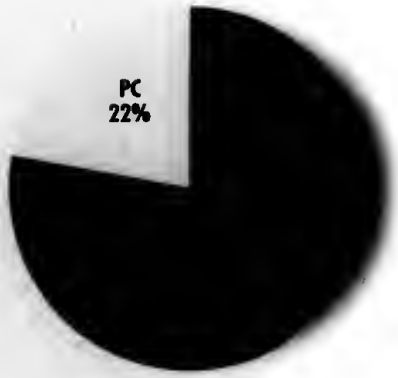
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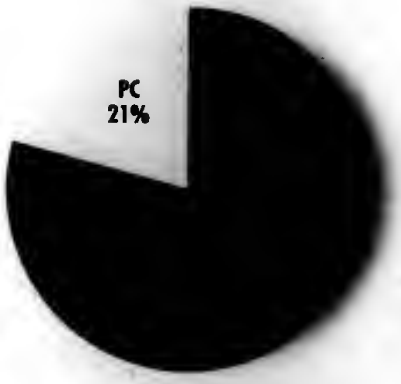
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Is the Internet

Yes.

By E. Ted Prince

Security is a problem on the Internet. Give me a break. There's so much security on the Internet now and coming down the pike that pretty soon you won't be able to get online unless you have clearance from the CIA.

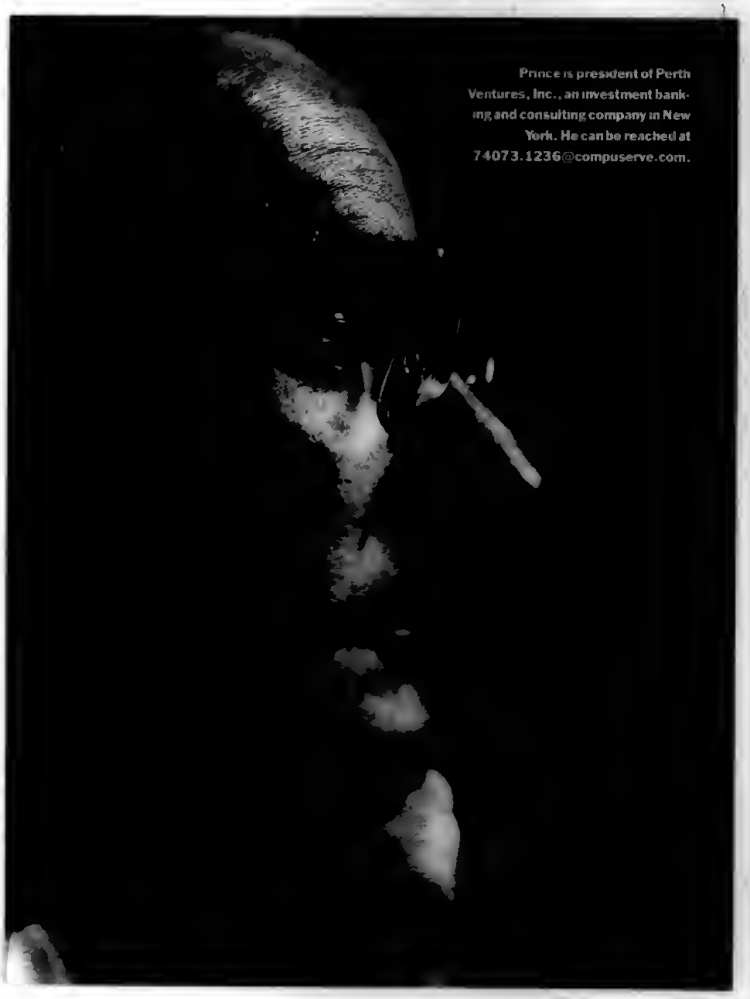
I've lost count of the new companies peddling electronic locks and keys for the Internet. I'm confused by the bewildering multiplicity of security techniques being promoted: firewalls of different hues and colors; routers and LAN hardware and software that provide automated encryption and access protection; numerous public and private encryption techniques, including secure HTML (a.k.a., Hypertext Markup Language); smart cards for cyberspace; enhanced Mosaic; hardware locks; security databases; and on and on.

And this is only the beginning. Don't forget that we're only six months into the Internet "revolution." Vendors are developing and selling new and even more tiresomely innovative ways of providing enhanced security. Start-ups dealing with Internet security are a-multiplying. If you think you're being bombarded now, wait a year. By then, you will be drowning in ciphers.

Experts in file transfer protocol are suddenly going to metamorphose into Internet security consultants with a vested interest in making security look worse than it is. A couple of widely publicized hacker incidents are great for business. The worse things appear, the more fortunes will be made.

I just don't think there's a problem. What we have is a tiny number of hacker incidents that have been blown out of proportion by the tabloid technoliterati. Even the Internet's security group, the Computer Emergency Response Team

Prince, *page 96*



Prince is president of Perth Ventures, Inc., an investment banking and consulting company in New York. He can be reached at 74073.1236@compuserve.com.

Sound Off!

secure?

At issue: No business wants to put its data at risk to hackers, snoops and thieves. But that's exactly what most are doing when they connect to the Internet, says one Internet gateway designer. Hogwash, counters his opponent. The 'net is safe; alarmists are just making users paranoid.



No.

By William Cheswick

Is the Internet secure enough to run a browser if you don't care whether someone is watching? Sure. Is it secure enough to handle a billion-dollar transfer? No.

Security is always a question of economics. What am I risking, and how much am I willing to pay to protect it?

Some people have little or nothing to lose, and if a connection to the Internet puts their PC at risk (it often doesn't), who cares?

But many people have more to lose than they know. A reporter recently told me he had nothing worth protecting on his PC. I asked him where he kept his list of sources and contacts and article ideas and where he stored half-written stories and notes. Would any of these be of interest to his competitors? These thoughts sobered him considerably.

A Fortune 500 company asked me once about firewalls after having to explain to the government how an unauthorized intruder obtained unobstructed and unaudited access to a computer involved in a federal contract.

If I walk around a safe neighborhood, I am unlikely to be attacked, even if I am well-dressed and carrying a lot of money. If I am in a bad neighborhood, my risk goes up, especially if the denizens there suspect I might have something worth taking. I would call the good neighborhood relatively secure and the bad insecure.

The Internet is a bad neighborhood.

How many hundreds of books and newspaper articles does it take to convince people that there are a few nasty, knowledgeable and mostly anonymous bad guys on the Internet who can roam almost at will? All it takes is one to ruin your day or your reputation or your competitive edge.

Cheswick, *page 96*

Is the Internet secure?

Yes.



Prince, *continued from page 94*

(CERT), estimates there are only eight to 14 hacker incidents per day. That's an immeasurably small proportion of all Internet transactions.

You have more chance of getting your credit-card number stolen in a restaurant or on a phone in Grand Central Station than you do of having it stolen on the Internet.

If you believe what you hear and read, the 'net is full of super hackers out to get you. But most of the small number of incidents that occur are not even perpetrated by crack hackers. According to CERT, most break-ins are done using unsophisticated methods and do not involve penetration of firewalls. Break-ins on your departmental LAN are vastly more likely.

> Companies need "elementary precautions, rather than some electronic version of a chastity belt."
>
> E. Ted Prince

All companies really need on the Internet are elementary precautions, rather than some electronic version of a chastity belt.

Think about it: Most of the stuff we do on the Internet doesn't need ultimate protection. Vendors and consultants want to scare you so they can sell you something. Are firewalls just another way of selling big iron?

Many companies need only minimal levels of security or even none at all. I deal with many companies that happily send electronic mail, operate home pages and constantly navigate the World-Wide Web to get information. Few of them have heard about firewalls or any of the other security devices. Even fewer care. If need be, they can go out and buy a package, such as access control, encryption or software firewall, for $195 from a catalog. That will give them all the security they need.

The problem now is not that there's too little security on the Internet, it's that there is going to be too much. Remember that the on-line world is still dominated by males. The 'net is the ultimate fantasy playland — several hundred million guys playing spooks and spies, comparing their latest high-tech security equipment with someone else's year-old stuff. It reminds me of what went on during the "hi fi" boom — who's got the biggest woofer?

Sure, there used to be a security problem on the Internet. But that was then, and this is now.

The hackers and the great unwashed who used and abused the Internet are being pushed out to some other place — maybe internet.alt? They have been replaced by somber-suited main streeters who have shareholders and product liability suits to occupy their wee hours. These anal-retentive types are not amused by electronic pranksters. They will spend billions to prove that they, and not the free thinkers and academics, are in control.

That's why the rest of us business types can stay secure in the knowledge that no one — but no one — is going to unlock our secrets in Fortress Internet in the future. ●

No.

Cheswick, *continued from page 96*

A lot of current hacker coverage is hype, but various books give a peek at what is really going on. Cliff Stoll, author of *The Cuckoo's Egg*, and Michelle Slatalla and Joshua Quittner, authors of *Masters of Deception: The Gang That Ruled Cyberspace*, relate close experiences with hackers and their results. Stoll slogged through tens of megabytes of keystroke logs, recording hackers' endless forays into systems whose administrators didn't have a clue.

A member of hacker gang Masters of Deception estimates that the owners of a majority of the machines they break into never discover the break-in. He reports that backdoors are often found years later. I've done a fair amount of slogging myself; these reports ring true.

> "The Internet is a bad neighborhood."
>
> William Cheswick

The Computer Emergency Response Team (CERT) keeps an annual record of hacking incidents reported to it (an incident can involve a single host or hundreds of hosts). CERT found that the number of incidents reported jumped from six in 1988 to 2,341 last year.

This is undoubtedly a huge undercount because most people either don't bother to report incidents or wish to avoid publicizing such problems.

One company, whose large research group was a staunch supporter of open network connectivity, had so many recurring problems with a particular hacker that it had to erect a firewall. (Eventually one *can* get tired of cleaning the rug and put the puppy out of the house.) Part of the company's research branch is still outside the firewall, with all of its other untrusted users.

But perhaps I am missing the point.

Perhaps one might say that the Internet is secure, and it's the software on the hosts that is not. Packets don't break into computers, people do. The streets are safe, the people who walk and drive upon them are not.

So is the 'net itself — the collection of Ethernets, routers, phone lines, root name servers, modems, frame-relay services and so on — secure?

No. It is not. Ethernet-based technologies have always been subject to eavesdropping. Last year, we learned that auxiliary hosts owned by many regional networks had been hacked, and the hackers installed sniffers — programs that record user addresses and passwords during log-in sessions. At last report, I heard that well over a million host/user name/password triples had been logged. (No wonder the Milnet had heavy hacking problems last summer. If you were a hacker who'd stolen a file containing a million passwords, wouldn't you extract a list of the military sites?)

One might argue that it was the hosts that were insecure, not the 'net. But these hosts managed, monitored and compromised what is the essence of the 'net: the packet flow.

These packets should have been encrypted because the Internet is insecure. That's the bottom line.

And there are other attacks possible on the network itself. The Domain Name System is subject to attacks that can derail the host name translation process. Attacks on routers can divert packet flows, providing opportunities for attacks and eavesdropping.

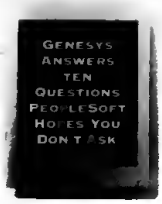
Hackers can also now hijack existing (and authenticated) TCP connections if they can eavesdrop on the packet flow. It is past time for the deployment of encrypted sessions.

Security is just another word for something left to lose. ●



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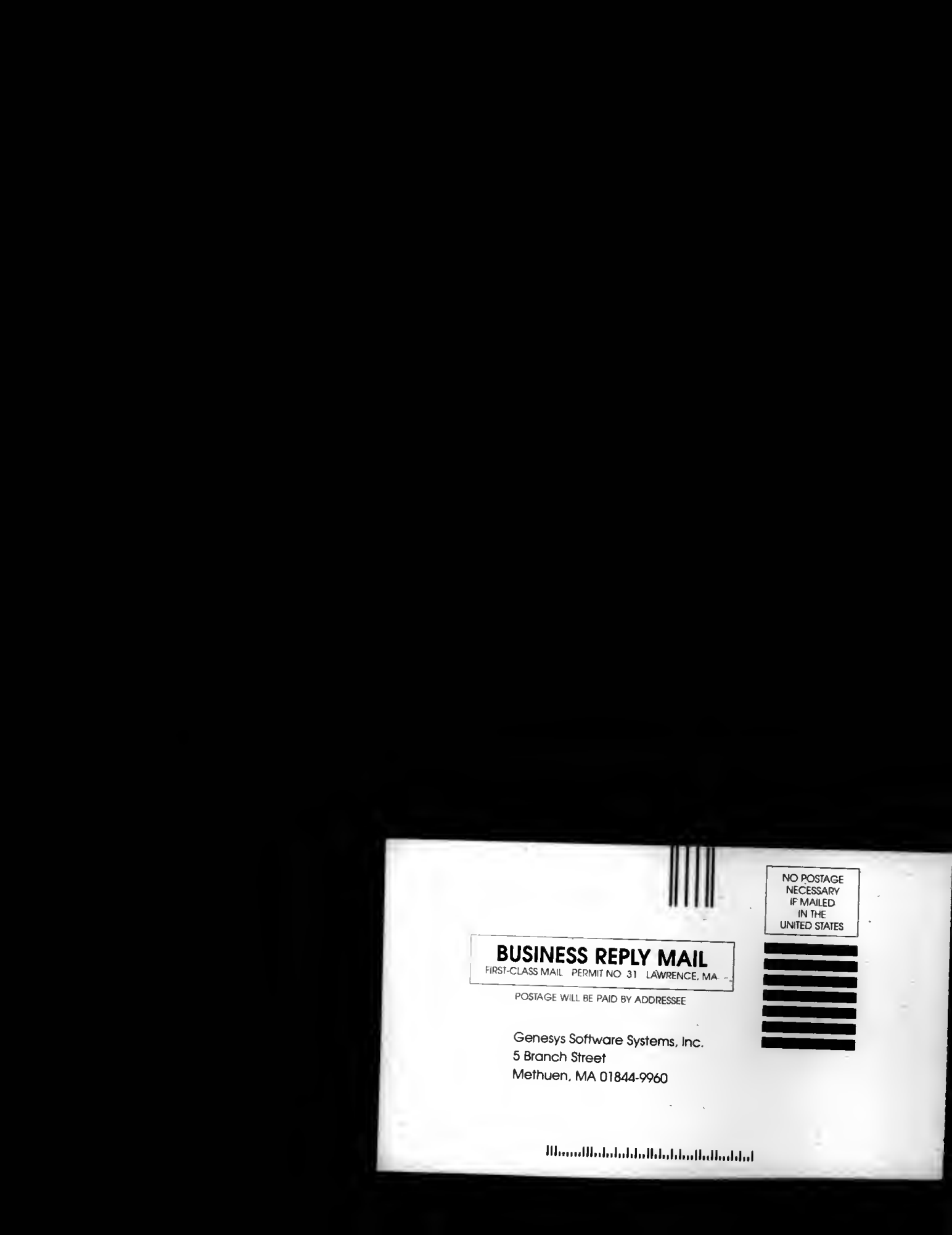
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July - September 1995

Issue Dates	Ad Closings Color*	Ad Closings B&W	Editorial Features & Custom Publications	Show Distribution & Ad Readership Study Issues
July 3	June 16	June 23	**CW Guide To: PDAs** Personal Digital Assistants, the latest evolution of microprocessor power in a small package, present unique buying options and support issues for IS organizations. This Guide will examine the leading products and tasks IS has in selecting and managing them **Buyers' Satisfaction Scorecard:** Market leading PDAs **Firing Line:** Newest PDA from a leading vendor	
July 10	June 23	June 30	**Closer Look:** Unisys	Starch Study
July 17	June 30	July 7	**CW Guide To: DBMS** The focus of database management systems is as the server for a variety of applications. Depending on the application type, IS organizations face varied buying decisions. We will examine which databases match which application needs best and analyze the leading products in each area. **Buyers' Satisfaction Scorecard:** Market leading SQL database mgmt. systems for midrange servers **Firing Line:** Latest DBMS from a leading vendor	
July 24	July 7	July 14	**Closer Look:** Power Macintosh	**Enterprise Computing** Chicago 7/26 - 7/28
July 31	July 14	July 21	**CW Guide To: Workgroup and Collaborative Software** Beyond e-mail and document management users are seeking products that help them manage business processes and work as teams. This Guide will examine how well the vendors are meeting this need **Buyers' Satisfaction Scorecard:** Market leading workgroup software **Firing Line:** Latest collaborative product from a leading vendor	
Aug.	June 28		**Computerworld Client/Server Journal** **Vertical Market Focus:** Insurance **Section Feature:** Product Focus on Networking	Object World Networks Expo Interop + Networld Unix Expo Harvey Study
Aug. 7	July 21	July 28	**Special Report:** Re-engineering the Workplace	
Aug. 14	July 28	Aug. 4	**CW Guide To: Desktop Databases** Personal databases that act as front ends to company applications and DBMS, as well as PC-based packages that serve the needs of workgroups or departments will be examined with the focus on IS buying decisions **Buyers' Satisfaction Scorecard:** Market leading desktop databases **Firing Line:** Latest DBMS from a leading vendor	**Object World** San Francisco 8/15 - 8/17
Aug. 21	Aug. 4	Aug. 11	**Closer Look:** Sun Workstations	
Aug. 28	Aug. 11	Aug. 18	**CW Guide To: Client/Server Financial Applications** One of the first applications companies move off of the mainframe is financials. But only recently have the vendors begun producing true client/server offerings. We'll look at how users like them and what more they need. **Buyers' Satisfaction Scorecard:** Market leading client/server financial software **Firing Line:** Latest client/server financial software from a leading vendor	Starch Study
Sept. 4	Aug. 18	Aug. 25	**Special Report:** Annual Salary Survey	
Sept. 11	Aug. 25	Sept. 1	**CW Guide To: Internetworking Routers and Hubs** Facing competition from many areas, routers and hub vendors are adding capabilities and repositioning themselves. How do these changes affect IS buying plans and what is the future internetworking product set? **Buyers' Satisfaction Scorecard:** Market leading hubs and routers **Firing Line:** Latest hub or router from a leading vendor **Custom Publication:** Object Application Awards Supplement	**Networks Expo** Dallas 9/12 - 9/14 Starch Study
Sept. 18	Sept. 1	Sept. 8	**Closer Look:** Client/Server Manufacturing Software	
Sept. 25	Sept. 8	Sept. 15	**CW Guide To: ATM Switches** ATM is becoming more widely installed and product offerings are multiplying. What are the benefits and caveats of this new high-performance technology? **Buyers' Satisfaction Scorecard:** Market leading ATM switches **Firing Line:** Latest ATM software from a leading vendor **Custom Publication:** White Paper on The Business Case for Client/Server (part 3 of 4-part Enterprise Software Directions Series)	**Interop + Networld** Atlanta 9/25 - 9/29 **Unix Expo,** New York City 9/26 - 9/28

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THE BEST Rx FOR RUMORS

Corporate rumors don't need to be devastating if handled well

By Candee Wilde

What was the most recent rumor you can recall?

We have a group of people who are very PC-oriented working with another product the company sells. They have made strong presentations lately, and my [mainframe] people felt their jobs were in jeopardy. We've [had] a lot of talks, and [I have] assured them that there is plenty of work. We're trying to get the two information systems arms to work better with one another.

— **WAGENBACH**

We've had some degree of budget cuts, and there were rumors there would be large-scale firings. I took care of that on electronic mail by reminding everyone that we will get rid of everything — from trips to seminars to lunches — before one single person is terminated for [anything] other than [just] cause. You can't grow people as easily as you can buy a lunch.

— **TEMARES**

How do you handle rumors among employees?

You tell them exactly what you know. They also respect you when you say, "I can't comment on that." But I only say that when [the rumor] involves people. There is never an occasion with a business issue where you say nothing. — **MAHER**

Be as open and honest as you can be. We've learned that change management is becoming more and more important as we deal with the way corporations are changing and the way IS must respond to those changes. — **HUNTER**

Confront it. Try to find out where [the rumor] came from, and try to find the truth. If it's true, I'll say so and give the real, complete story. — **TEMARES**

I try to nip those in the bud. — **SMITH**

It's critical that management have real credibility with people. If your people believe that you're open in communication, then they [will] accept what you say about the rumors, one way or the other. — **THORNLEY**

How do you prevent rumors from starting?

I have weekly management staff meetings, and I'm open with [IS staff]. We also have monthly meetings with the whole department where we discuss what's going on with the company. My style is to be up front with people, and I think that has been the success of our department. — **SMITH**

Rumors are a fact of life but not a good way of communicating. The only way to deal with them is to have managers who are credible and have knowledge of what's going on in the company.

— **THORNLEY**

We recently announced that we will be looking at outsourcing. I put a letter out to people saying that we're studying it and no decision has been made. This way, we hope to avoid a situation where false rumors might start. — **HUNTER**

We tell our people what our strategy is organizationwide for the next two to three years, then lay out our [IS] plans for the next 18 months that tie in to the overall corporate plan. In doing that, we let people know how our business is changing and what opportunities lie ahead for them. I think that puts rumors to rest. — **PEABODY**

What happens if a rumor is partially true?

You might have to say, "I'll tell you what I know" or "I'll tell you what the potential impact of a decision on you might be. Let's evaluate the good and the bad." Usually, the worst thing that can happen to an individual with a business issue is not worth the time fretting over it. For example, even if I knew the bank was being acquired, how meaningful would that be? The impact on people [here] would be at least a year off.

— **MAHER**

Be out front in terms of developing information for employees that will head off some of that [rumor]. Over the next couple of years, we will be moving into client/server in a big way. That means roles in IS will change dramatically. Some people might not make the transition. [But] our philosophy, rather than laying off, is to try to make the organization more effective by moving people around and into other jobs. One of the biggest challenges will be managing the transition. — **PEABODY** ■

Wilde is a freelance writer in Easton, Conn.

Thanks to our respondents

Jerry Maher, director of information technology, Barnett Technologies, Jacksonville, Fla.

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PSC

Get off the phone!

Telephone support comes first in the help desk's job, but managers who make time for related projects attract and grow the best staffs

By Alan Radding

From a career standpoint, the U.S. House of Representatives' Jane Warnick runs what many in the industry consider the Cadillac of help desks. What's her secret? Getting people off the telephone to develop other skills.

Warnick's help desk consists of 15 agents; only six or seven of them are on the phone each day. When they are not taking user calls, agents have six "field days" each month, scheduled in pairs, to pursue professional training and development.

Unfortunately, shops like Warnick's aren't common. Given the agents' lower salaries and the large proportion of time they spend on the phone, referred to as phone-in-ear (PIE) time, turnover is typically high. Only 25% of the staff stays three years. Many burn out in 14 months, says Warnick, the project leader.

Ideally, PIE time should not exceed five hours, experts say, although it now averages more than six hours at many companies. Staffers should also be engaged in researching problems, learning new technologies, developing educational materials or running user training sessions. "You've got to marry the hot line time to other challenging work," Warnick says.

As a result of Warnick's efforts, her help desk's phone time averages significantly less than five hours a day. Agents develop personal interests that become specialties, such as desktop publishing, intensive software knowledge, hardware repair or new product evaluation, Warnick's staff also stays longer. One agent has been on the help desk seven years, another has been there five years, and several have been there three years.

AVOID BURNOUT. DON'T FORGET TO ASK.

How much time is spent on the telephone? Five hours is acceptable. Six hours or more will lead to fast burnout.

Are automated help desk tools available, such as knowledge databases and problem management tools?

Are there opportunities to research problems, prepare training materials, gain advanced skills and lead training sessions?

Is there a career path into mainstream IS or end-user computing?

As a result, Warnick's staff is always being raided by other departments. "The people in my area are very valuable; other departments are dying to get them," she says. Her agents are also preferred candidates when jobs open in various special interest areas.

Unfortunately, the emergence of automated, on-line help desk tools has had little impact on the help desk as a career option — except to flatten the rapid growth of help desks driven in large part by client/server computing and multivendor environments. Automated tools aren't easy enough to use to replace the help desk or effective enough to make life significantly easier. "On-line tools can't replace a qualified help desk person," Warnick says.

Research bears this out: 28% of the people using documentation call the help desk for support, as do 16% of those using problem knowledge databases, according to Bob Johnson, director of software services research at Dataquest Worldwide Services Group in Westboro, Mass. And this doesn't include the large body of users who don't even pick up the documentation or electronic help tools. "It is impossible to fly alone," Johnson says.

Lots of room

The result is that help desk jobs are plentiful. "Help desks are hot right now," reports Ivy Meadors, president of High Tech High Touch Solutions, Inc., a help desk consultancy in Seattle. There are two types of help desks: internal help desks that work with a company's users and external help desks, such as those established by software vendors to work with outside customers. In addition, a growing number of companies that outsource help desk services are emerging. "The third-party outsourcers are growing the fastest," Johnson says. External help desks are regarded as the most difficult because of the wide range of callers they support.

But the career path is cloudy for help desk professionals who aren't considered part of the business and aren't a part of mainstream IS. "There isn't much of a future for help desk staff in a lot of companies," says Al Starek, president of Hyperion Associates, a help desk consultancy in Fredericksburg, Va.

To leverage a successful help desk career, spend time expanding your skills, Johnson suggests. "Don't look at just one specific technology. Pick a help desk where there are interrelated technologies and new areas growing out of it." ■

Radding is a freelance writer in Newton, Mass.

WHERE DO THEY GO?

A help desk is often viewed as a Trojan horse – a way for people in get into the company and then move on after 12 to 14 months. Help desk staffers typically go to:

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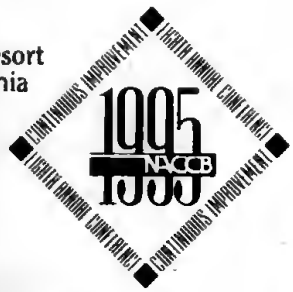
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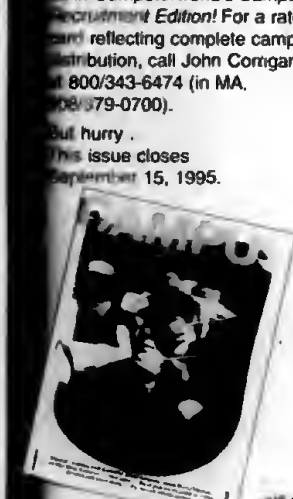
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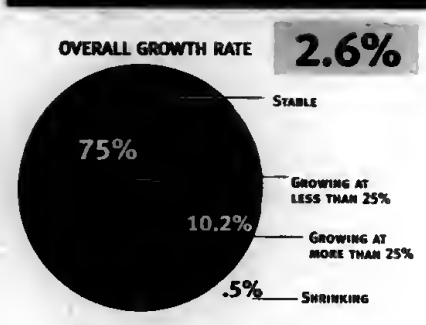
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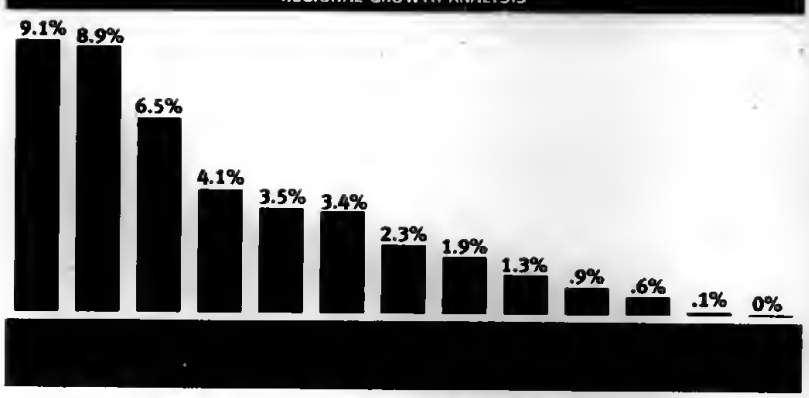


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CHANNEL CHOICE: A competitive edge

Where and how you buy your equipment can affect your overall IS strategy. Unfortunately, most firms handle much, if not most of their purchases, on an ad hoc basis.

By Lee Levitt

Equipment acquisition is still a haphazard affair.

For example, when a department needs PCs, many companies still send a request for proposal to three resellers in a vain effort to save $20. Software? They might swing by the local CompUSA, Inc. to see what's on sale. Something broken? They'll see if they can fix it in-house, or they'll call yet another company unfamiliar with their information systems architecture.

> Ninety percent of companies working with resellers today use them only as product warehouses rather than strategic partners.

Laugh if you will, but almost half of corporate America still handles much of its product purchases this way — with no coordination across business units. Moreover, about 80% of the companies don't view purchasing as a strategic advantage.

In reality, every activity — from buying hardware and software to upgrading Ethernet cards or network maintenance — should lead to a common goal a competitive information technology advantage.

So where do you begin?

Channelwise, it's a confusing world out there. From an expanding array of retailers, traditional dealers and value-added resellers to electronic malls on the Internet, the market has it all.

Take a good look

But corporate buyers would do well to examine the reseller channel more closely. Companies such as Entex Information Services, Inc., MicroAge, Inc., InaCom Corp. and others are investing in electronic order-entry systems, configuration facilities and mechanisms for worldwide delivery. They're also boosting their support staffs and training capabilities.

At one end, many resellers have focused on price, availability, delivery, consistency and quality. For example, companies such as PCs Compleat and Catalink Direct, Inc. have taken the fuss out of ordering and delivering small to medium quantities of PCs and associated products. Need a laptop, software or a printer? Just pick up the telephone. PCs Compleat will ensure that your order arrives at your doorstep on time and to your specifications.

If you prefer to order products on-line, Catalink Direct provides purchasing agents or department managers with a screen full of information. Fill an electronic shopping cart with the equipment you need, click on "Order" and within days the boxes appear at your door.

If you have no idea what to do with the boxes once they arrive, you can buy from or partner with resellers — such as Entex, Vanstar Corp., MicroAge, CompuCom Systems, Inc. and InaCom — that will deliver, install and maintain the product countrywide if not worldwide. And Digital Equipment Corp., IBM, Hewlett-Packard Co., Microsoft Corp., Lotus Development Corp. and a few other vendors can support these resellers in this effort.



But while they offer value-added skills and services, 90% of companies use resellers only on a tactical basis — as a warehouse or product provider instead of as a strategic partner. But do you really want the UPS man to be a key link in your IS strategy? Or would you rather have a supplier that can deliver *and* implement the products?



If you're unsure, make a list of key support services, determine what it would cost to run your organization without these services, and meet with potential suppliers. You'll be surprised at how much some of the leading resellers have invested in expertise and infrastructure.

A word of warning, however. Be an informed consumer. Take a good look at the real capabilities of these potential partners. I've met with a few that have described plans to expand into the services business year after year, but neither the infrastructure nor the revenue ever materialized. But these resellers are the exception, not the rule.

The payback for the corporate buyer is that you can focus on competitive advantage and let the reseller worry about the rest. Few of you would consider generating your own electricity to run plants or building roads between offices. So why do you insist on building your own systems infrastructure? ■

Levitt is director of distribution channels research at International Data Corp. in Framingham, Mass.

Question of the Month:

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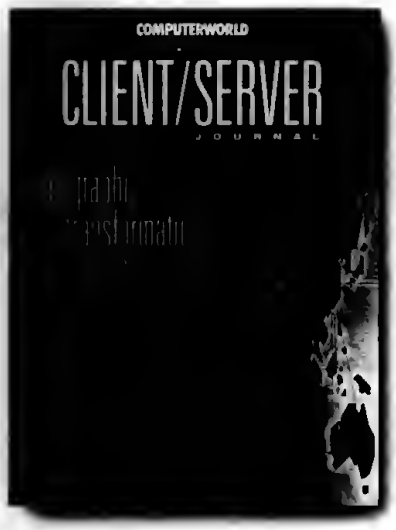
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Computerworld Client/Server Journal: Where distributed computing meets business objectives

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Coming in the June and August issues...

June 1 Issue



Cover Story: Client/Server Goes Global

What are multinational companies doing to ensure consistent client/server implementations across their far-flung enterprises? This cover story in our June issue examines what type of technologies, tools and strategies these companies are using to create successful global deployment and how they are overcoming the cultural challenges inherent to each country they are implementing that strategy in.

Vertical Market Focus: Retail

Having survived a period of rampant consolidation, the retail industry is pulling out of the recession and ready to invest more in distributed computing. Where do retailers go beyond just "client/serverizing" their point of sales systems?

Product Focus: Application Development Tools

Our Test Drive feature looks at Borland's Delphi and Firing Line examines Informix New Era.

Careers Column: Computerworld editor Joe Maglitta's account of attending a week long "bootcamp" on client/server training.

August 1 Issue

Ad Close: June 28

Cover Story: Distributed Computing in the Next Millennium

What technology is incubating in scientific labs today that will influence what distributed computing will look like in the next millennium? Computerworld Client/Server Journal talks to a wide range of experts — university researchers, scientists, futurists, vendors and chief technology officers to find out. Our cover story takes a look at what's on the horizon for user interfaces, application development, hardware architectures and networking infrastructures.

Vertical Market Focus: Insurance

A look at how downsized, restructured firms in this industry are taking groupware one step further by creating links with extra-enterprise partners — through EDI or Notes or workflow — to further enhance customer service.

Product Focus: Network Systems

Our Firing Line takes a look at Sun Microsystems' Solstice and IBM's Karat

Careers Column: How to spot the signs of staff burn out in the IS organization and tips on dealing with it effectively.

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Where distributed computing meets business objectives

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May 26 Stock Ticker

Gainers

Percent

Legent Corp.	61.8	Chipcom Corp.	50.9
TriCord Systems	22.6	NetManage Inc.	16.1
Reconvention International	22.1	MICOM Communications Corp.	14.8
EMC Corp. (H)	20.0	Cray Computer	14.3
Microcom Inc.	19.1	Intuit Inc.	14.0
Computer Corp.	17.9	Encore Computer Corp	13.9
4th Dimension	15.2	FTP Software Inc	12.2
Microage Inc.	13.6	Xircom	11.3

Dollar

Legent Corp.	12.81	Chipcom Corp.	-13.38
Intel Corp (H)	4.81	Intuit Inc.	-10 50
Computware Corp	4 75	Parametric Technology	3 50
EMC Corp. (H)	4.00	FTP Software Inc.	-3.25
3 COM Corp. (H)	3 75	NetManage Inc.	3.25
Texas Instruments (H)	3 50	Peoplesoft	3.00
Oracle Corp. (H)	3.19	Xircom Corp	3.00
Computer Associates	2.88	Hyperion Software Corp	-2 75

Deal nixed, stocks mixed

When the deal between Microsoft Corp. (MSFT) and Intuit, Inc. (INTU) fell apart, investors remained bullish on Microsoft, while Intuit shares plummeted 12½ points last Monday.

But analysts were not worried by the drop. "It just reflects the change in stock ownership away from arbitrageurs [involved in the merger] back to investors," said Peter Rogers, an analyst at Bear, Stearns & Co. in San Francisco. The stock had bounced back up by the end of the week (see chart).

And what about other stocks likely to be affected by the merger saga? Intuit's financial software competitors are mostly privately held, but one stock, **State of the Art, Inc. (SOTA)**, hardly reacted at all to the news. And **Novell, Inc. (NOVL)**, with a lot at stake as a Microsoft competitor, was barely a blip on the screen.

But the news perked up on-line service vendors such as **America Online, Inc. (AOL)**, which are preparing to battle The Microsoft Network in August. The merger would have allowed Microsoft to use Intuit's widely popular Quicken software as a front end for financial services, which is already a weak spot in America Online's offerings.

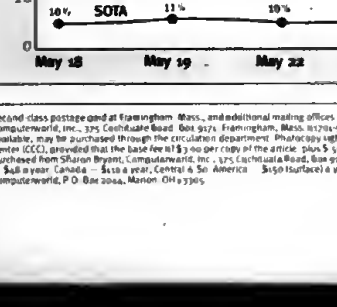
"I think when the deal [falling through] was announced, the stock that day was up. And that reflects the fact that anything bad for Microsoft is good for America Online," said Paul Sweeney, an analyst at Wheat First Butcher Singer in Richmond, Va.

The onus of Microsoft bringing its clout to on-line services is just too strong. AOL is "making all the right moves, but investors are getting concerned," Sweeney said.

— Tim Ouellette

Cheers and boos to the news

Reaction of stock prices to Microsoft's decision not to purchase Intuit



Exch	52-Week Range			May 26 Vol Net Vol Pct Trd	Change	Change
Communications and Network Services						Off 0.55%
OTC	46.25	20.13	TCSI Corp (H)	47.00	1.75	3.9
NYS	46.88	17.88	Ameritech Corp	43.88	-0.13	-0.3
NYS	57.00	47.25	AT&T	49.81	-0.12	-0.1
OTC	43.25	5.63	Ascend Communications (H)	39.50	-0.75	-1.9
OTC	19.75	12.75	Banyan Systems Inc	16.38	1.19	7.8
OTC	40.00	18.81	Bay Networks Inc (H)	38.13	0.88	2.3
NYS	58.50	48.50	Bell Atlantic Corp	53.75	-0.25	-0.5
NYS	81.50	58.50	BellSouth Corp	58.88	-1.75	-2.9
NYS	22.25	10.00	Bolt, Beranek & Newman	17.63	0.13	-0.7
OTC	19.75	9.00	Bridgetree Technology	15.25	0.25	1.7
NYS	55.75	13.00	Cabletron Systems (H)	53.75	0.50	0.9
OTC	23.75	10.00	Centigram Communications	13.75	0.25	1.9
OTC	50.50	20.13	Compuserve Corp	20.25	13.50	30.9
OTC	48.14	18.25	Cisco Systems Inc (H)	46.13	2.19	5.0
OTC	13.00	6.13	Compression Labs Inc.	9.44	-0.06	-0.7
OTC	10.88	5.13	Computer Network Tech (H)	9.25	0.25	2.6
OTC	16.50	7.50	Cpsnet Com	11.69	-0.44	1.6
OTC	6.13	2.13	Data Switch Corp	4.00	-0.06	1.5
OTC	42.38	17.88	DSC Communications (H)	39.13	-0.34	-0.4
OTC	41.75	10.00	FORE Systems Inc	26.50	-0.75	-0.9
NYS	35.88	9.25	General Datacomm Inds.	11.69	0.88	8.1
NYS	34.88	29.50	GTE Corp.	32.25	0.00	0.0
NYS	114.50	77.00	ITT Corp	100.13	1.50	1.4
OTC	25.88	17.25	MCI Communications Corp	19.63	1.25	6.8
OTC	15.75	5.75	Micom Communications Corp	9.75	1.00	14.8
OTC	12.63	5.13	Microcom Inc	11.31	1.81	19.1
OTC	10.50	6.00	Netpro Corp.	7.38	0.63	9.1
OTC	8.63	5.25	Network Computing Devices	7.38	-0.25	3.3
NYS	27.88	7.50	Network Equipment Tech.	23.88	1.63	7.1
OTC	50.63	14.25	Octocom Systems	25.13	1.50	6.3
NYS	46.50	28.50	Northridge Networking Corp	35.00	1.88	5.7
NYS	41.00	27.63	Northern Telecom Ltd.	37.13	0.50	1.0
OTC	23.25	13.50	Novell Inc (H)	20.00	1.31	-0.2
NYS	35.38	17.75	Nynex Corp	33.38	0.50	1.1
OTC	24.25	13.50	Octel Communications Corp	23.50	0.50	2.6
OTC	25.88	6.00	Optical Data Systems Inc. (H)	23.00	1.00	-4.2
OTC	3.50	2.13	Pairgain Data Comm Networks	5.75	-0.13	3.2
OTC	50.13	51.75	Picturetel Corp	46.38	-0.75	1.6
OTC	9.13	2.13	Protocol Inc	6.75	0.38	6.4
OTC	7.50	2.75	Racotek Inc	5.38	0.51	-5.5
OTC	7.38	3.50	Retix	6.00	-0.13	3.8
NYS	24.88	16.31	Scientific Atlanta Inc	19.63	1.00	-4.8
NYS	46.25	30.25	Southwestern Bell Corp	43.88	1.00	2.3
NYS	40.13	25.88	Sprint Corp	31.75	-0.25	0.8
OTC	51.63	11.50	Standard Microsystems Corp	18.00	-0.88	-4.6
OTC	47.00	19.00	Stratacom Inc.	38.25	0.50	1.5
OTC	6.13	3.69	Telebit Corp (H)	5.50	0.00	0.0
OTC	60.50	24.00	US Robotics (H)	54.50	0.81	5.0
NYS	45.50	34.63	US West Inc.	39.50	0.00	0.0
OTC	23.50	10.25	Xircom	10.75	-1.38	-11.1
OTC	28.00	8.00	Xyplex Inc	23.25	-0.25	1.1
PCs and Workstations						Up a 2%
OTC	6.13	3.50	Advanced Logic Research	4.00	0.13	3.1
OTC	88.06	24.63	Apple Computer Inc	47.13	-0.00	-0.1
OTC	19.75	10.38	AST Research Inc.	18.44	0.19	1.0
NYS	44.50	29.50	Compaq Computer Corp	40.25	0.50	1.3
OTC	98.63	21.50	Dell Computer Corp	52.75	-0.88	1.6
OTC	25.25	9.25	Gateway 2000 Inc	10.25	0.25	2.4
NYS	72.50	55.56	Hewlett Packard Co. (H)	67.63	0.88	1.3
OTC	16.25	7.50	Micron International Inc	15.25	0.75	5.2
NYS	80.13	18.25	Silicon Graphics (H)	37.63	-0.15	0.1
OTC	50.50	18.25	Sun Microsystems Inc (H)	47.38	2.50	5.6
NYS	52.38	35.50	Tandy Corp	46.88	1.25	2.6
Large Systems						Up a 12%
ASE	13.63	5.25	Amdahl Corp (H)	11.19	0.94	5.5
NYS	8.88	3.75	Convex Computer	5.88	0.13	2.1
OTC	0.22	0.16	Cray Computer	0.19	-0.02	14.3
NYS	24.38	14.69	Cray Research Inc.	22.75	-0.38	1.6
NYS	12.00	6.75	Data General Corp	8.13	0.50	6.6
NYS	49.50	18.38	Digital Equipment Corp (H)	48.00	1.13	2.4
OTC	5.56	3.22	Encore Computer Corp	4.56	-0.51	11.9
OTC	10.50	6.50	Harris Computer Systems Cor	10.00	1.06	11.7
NYS	97.88	54.50	IBM (H)	95.75	2.63	2.8
OTC	7.38	5.00	Meridian Data Inc (L)	5.75	0.38	11.1
OTC	12.25	4.25	Netframe	5.50	-0.25	-4.3
OTC	21.25	11.75	Sequent Computer Sys.	16.31	0.81	5.2
OTC	7.00	3.13	Sequoia Systems Inc	5.88	0.19	4.1
NYS	50.88	25.25	Stratus Computer Inc	30.50	0.13	0.4
NYS	19.75	11.13	Tandem Computers Inc	13.63	-0.25	1.8
OTC	10.13	3.88	Tricord Systems	4.75	0.88	22.6
NYS	12.13	6.75	Unisys Corp	10.25	0.13	1.2
Software						Up a 14%
OTC	56.75	24.50	Adobe Systems Inc	54.88	1.31	2.1
OTC	5.88	2.50	American Software Inc.	3.88	0.25	6.9
OTC	50.75	29.50	Apple Inc	29.63	1.63	6.4
OTC	44.00	29.25	Autodesk Inc.	38.13	1.25	3.4
OTC	7.00	1.75	Ballmann Intel Systems	5.88	0.25	4.5
OTC	50.75	22.00	BGS Systems Inc (H)	30.50	0.88	3.0
OTC	60.25	40.25	BMC Software Inc	47.50	2.63	6.0
OTC	30.75	16.50	Borland International Inc	20.50	1.00	5.1
OTC	16.38	8.00	Borland Int'l Inc	12.00	-0.63	5.0
OTC	22.00	5.25	Bruce Control Systems Inc	7.75	0.13	1.6
OTC	5.75	1.78	CE Software	2.25	-0.09	3.1
ASE	20.25	6.25	Chevron Software Inc	14.63	0.63	4.5
OTC	26.25	9.75	Cognos Inc (H)	24.63	1.00	3.9
OTC	7.63	3.50	Computer Associates	6.75	0.88	4.3
NYS	6.50	2.50	Computervision Corp	5.25	-0.38	6.7
OTC	49.25	21.00	Computware Corp	11.25	4.25	17.9
OTC	19.00	9.00	Commsoft Inc	13.50	0.50	2.8
OTC	16.75	10.13	Corel Corp	15.50	0.13	-0.8
OTC	14.13	7.25	Datastorm Technologies Inc.	13.25	0.25	1.9
OTC	5.13	1.88	Easel Corp	3.25	0.25	8.3
OTC	36.25	14.25	Felmit Corp	12.00	0.25	2.4
OTC	8.75	5.00	4th Dimension	6.75	0.65	15.2
OTC	26.50	8.50	Frame Technology (H)	21.88	1.50	-6.4
OTC	17.63	12.50	FTP Software Inc.	25.50	3.25	12.1
OTC	10.25	7.00	Group1 Software	9.50	0.00	0.0
OTC	13.75	8.75	Gupta	9.75	0.11	1.3
OTC	10.25	4.63	Hogan Systems Inc	8.63	0.00	0.0
OTC	49.75	21.25	Hyperion Software Corp	15.50	2.75	7.2
OTC	13.75	12.25	Information Resources	13.13	0.63	4.5
OTC	49.25	14.25	Informix Corp (H)	45.44	0.56	0.7
OTC	14.38	7.38	Intergraph Corp	11.00	0.38	5.0
OTC	6.75	2.50	Interleaf Inc	3.88	0.25	2.2
OTC	10.75	8.63	Intersolv Inc	10.63	-0.13	-0.2
OTC	88.25	29.50	Intuit Inc	81.50	10.38	14.0
OTC	43.44	19.00	Legent Corp	43.44	17.81	41.8

Exch	52-Week Range			May 26 Vol Net Vol Pct Trd	Change	Change
OTC	61.50	25.00	Lotus Development	41.69	2.06	5.2
OTC	11.50	3.63	Magic Software Enterprises	4.50	0.25	5.9
OTC	14.50	6.75	Mathematica Group Inc	11.50	-0.75	-6.1
OTC	35.25	14.75	Mathsoft Corp (H)	35.25	2.25	6.8
OTC	4.75	1.44	Mathsoft	2.88	0.13	4.5
OTC	11.50	6.75	Mcafee Associates	10.00	0.50	1.8
OTC	10.25	9.38	Meridian Graphics (H)	10.25	0.00	0.0
OTC	20.00	10.25	Micro Focus	11.75	0.50	1.3
OTC	8.00	4.63	Microgenix Inc.	6.25	0.13	2.0
OTC	89.50	46.00	Microsoft Corp (H)	87.00	2.63	3.1
OTC	22.50	5.63	Mks Mortals Inc	14.75	2.75	30.3
OTC	57.75	22.16	Oracle Corp (H)	36.38	3.19	8.8
OTC	49.00	21.50	Parametric Technology	44.25	3.50	2.1
OTC	24.25	9.00	Peoplesoft Systems Inc	13.00	1.50	13.0
OTC	49.50	14.00	Pervasive	42.50	3.00	5.6
OTC	10.00	4.50	Phoenix Technologies	9.50	0.25	2.7
OTC	14.75	5.50	Platinum Software	12.00	0.00	0.0
OTC	25.25	12.00	Platinum Technology	17.00	1.00	6.3
OTC	59.50	27.00	Progress Software Corp	47.81	0.13	0.3
OTC	8.13	1.00	Quarterdeck Corp	2.88	0.53	3.6
OTC	18.75	9.50	Random Technologies Inc	10.25	1.63	8.8
OTC	5.38	2.00	Rasterops	4.25	0.13	2.9
OTC	6.13	2.63	Roos Systems	3.13	0.38	10.0
OTC	12.00	0.50	Saphire Int'l Corp B V	3.00	0.06	2.0
OTC	29.13	11.50	Softkey International	26.25	2.75	11.7
OTC	6.25	2.88	Software Publishing Corp	4.50	0.25	7.2
OTC	12.50	5.00	State of the Art	10.44	0.31	3.9
OTC	38.50	25.00	Sterling Software Inc	34.13	1.63	4.5
OTC	15.00	3.81	Stonc Computers Reg Ads(H)	14.50	1.13	8.4
OTC	52.00	19.88	Symantec Inc	32.50	1.00	3.1
OTC	74.50	9.88	Symantec Corp	21.63	0.13	0.5
OTC	59.25	53.00	Synopsys (H)	56.00	0.63	1.1
OTC	30.00	10.63	System Software Assoc (H)	24.13	1.81	6.7
OTC	7.25	3.25	Tenstic Corp	5.75	0.50	9.5
OTC	24.00	7.88	Visual Edge Systems	10.38	0.38	3.5
OTC	22.00	10.75	Vmark Software Inc	14.13	1.13	7.5
OTC	10.75	6.50	Waleed Interactive Systems	6.00	0.00	0.0
OTC	55.50	10.75	Wall Data Inc. (L)	10.25	0.25	4.5
OTC	10.25	9.13	Wang Laboratories Inc	10.25	1.69	19.0
Semiconductors						Off a 1%
NYS	37.63	22.75	Advanced Micro Devices	31.88	0.81	2.6
NYS	35.00	16.88	Analog Devices Inc (H)	31.88	0.50	1.7
OTC	49.25	21.81	Brooks Corp. (H)	44.75	1.88	4.8
OTC	31.13	3.81	Linear Technology Inc (H)	30.13	0.25	0.9
OTC	35.88	21.00	Cirrus Logic (H)	57.00	0.00	1.6
NYS	37.25	15.00	Cypress Semiconductor Corp (H)	17.88	1.63	4.7
NYS	20.25	13.50	Dallas Semiconductor	19.00	-0.13	-0.7
OTC	51.75	16.25	Integrated Device Systems	29.00	0.50	1.8
OTC	119.63	56.13	Intel Corp (H)	104.00	6.63	6.3
NYS	77.25	22.50	I S I Group Corp. (H)	72.13	0.13	0.2
OTC	15.38	11.50	Lattice Semiconductor (H)	13.00	1.25	5.6
NYS	58.75	35.25	Micron Technology (H)	46.38	1.25	2.6
NYS	64.25	63.38	Motorola Inc.	60.63	2.13	1.8
NYS	28.50	14.38	National Semiconductor	26.25	0.25	0.9
OTC	52.00	6.75	Sanmina Semiconductor (H)	10.13	0.50	1.7
NYS	126.13	63.38	Texas Instruments (H)	122.50	3.38	2.8
OTC	30.15	16.25	Vi Si Technology (H)	35.88	0.25	1.8
OTC	5.25	1.78	Wafer	4.50	0.06	1.6
ASE	19.63	11.81	Western Digital Corp (H)	17.25	0.00	0.0
OTC	97.00	29.00	Xilinx (H)	80.63	1.00	1.3
OTC	31.25	17.25	Zycad Inc	17.25	0.00	0.0
Peripherals and Subsystems						Up a 1%
OTC	21.50	14.38	American Portable Computers	18.50	1.50	8.8
STC	17.00	15.00	Amstrad Plc	15.25	1.13	9.7
OTC	29.25	16.75	Bmc Tech Inc	24.13	1.88	11.0
OTC	6.25	3.38	Cadmus Corp	4.50	0.38	9.1
ASE	4.25	1.50	Computone Systems	4.00	0.13	3.2
NYS	14.00	9.00	Conner Peripherals	11.25	0.00	0.0
OTC	24.00	7.38	Creative Technology Ltd	8.00	0.65	7.3
OTC	11.75	9.50	Data Race Inc. (H)	10.38	0.75	7.7
ASE	7.63	0.13	Datacard Corp	4.38	0.50	4.9
NYS	24.88	12.50	E M C Corp (H)	24.88	4.88	10.6
OTC	22.63	5.63	Exabyte Corp	23.00	0.38	1.7
OTC	17.88	13.25	Evans & Sutherland Comp	16.50	0.25	1.5
OTC	24.00	11.75	Exabyte	13.63	0.13	0.9
OTC	8.63	1.88	Intelligent Input Systems	2.94	0.22	8.0
OTC	15.75	1.88	Iomega Corp	10.56	0.75	5.6
OTC	7.00	2.00	Qpl Systems Inc	4.00	0.25	6.7
OTC	42.63	17.00	Qualstar Corp	19.00	0.00	0.0
OTC	6.50	2.63	Maxton Corp	4.50	0.50	10.0
OTC	11.50	6.00	Microboards Corp	6.88	0.25	4.1
OTC	18.75	8.75	Printer Ribbon Inc. (L)	10.75	0.75	7.5
OTC	28.75	5.81	Printronix Inc	27.25	0.25	1.2
NYS	10.75	5.19	Qms Inc	5.63	0.13	2.3
OTC	22.25	13.63	Quantum Corp (H)	20.63	0.50	2.4
OTC	15.00	2.50	Rainus Inc	9.75	0.13	1.3
NYS	9.63	6.50	Recognition International	8.63	1.50	21.1
OTC	7.00	4.15	Reason Inc	4.15	-0.11	2.8
OTC	18.00	10.63	Sandisk Technology (H)	15.75	1.12	7.7
NYS	10.13	17.00	Storage Technology	21.00	-0.63	-2.9
NYS	67.38	27.38	Tips Engine Inc	46.00	0.75	1.7
OTC	125.88	90.65	Xerox Corp	116.00	1.00	0.8
Services						Up a 0.05%
OTC	24.88	14.81	Answer Computer Systems	21.56	0.13	0.5
NYS	5.50	0.56	Asarco Inc	0.75	0.00	0.1
OTC	27.50	14.50	Analysts Int'l.	24.75	0.00	0.0
NYS	88.00	58.75	Automatic Data Processing	61.00	0.25	2.0
OTC	36.25	18.00	Cambridge Tech Partners	32.25	0.75	2.4
NYS	35.00	21.50	Ceridian Corp	33.38	0.50	1.5
NYS	30.88	18.13	Computer Inc.	30.25	0.81	2.3
OTC	21.00	8.25	Computer Horizons	18.38	1.13	5.8
NYS	32.63	19.75	Computer Sciences	32.63	2.31	6.3
NYS	32.50	7.50	Computer Task Group	11.00	0.13	1.8
NYS	29.63	6.25	Comdisco Inc	27.00	0.38	1.5
OTC	11.50	5.38	Cooper & Data Systems Inc	5.88	0.25	2.0
OTC	12.13	8.13	Edmead Discount Software	9.63	0.00	0.0
NYS	43.88	35.00	General Motors (E 1934)	42.75	1.00	2.4
OTC	14.25	6.88	Inacom Corp	11.63	0.38	3.4
OTC	25.25	7.50	Intelligent Electronics	12.63	1.13	9.8
OTC	17.75	7.88	Mpsi Sys	8.50	0.63	15.0
OTC	26.00	8.50	Merrimac Inc.	11.50	1.38	13.6
OTC	32.50	19.00	Paychex	31.25	1.00	3.3
OTC	31.63	30.65	Policy Management Sys.	47.13	0.00	0.0
NYS	30.88	22.25	Revco Drug and Revco Ds	24.25	0.00	0.0
OTC	22.25	16.75	Sei Corp	20.13	0.75	3.9
OTC	50.13	22.25	Shared Medical Systems	41.81	0.06	0.2
OTC	8.00	4.88	Sni Systems Inc	6.44	0.06	0.9
NYS	21.50	8.25	Southland Computer Inc.	17.13	0.13	0.7
OTC	50.00	32.25	Surgical Data Systems (H)	49.25	2.50	5.1

KEY: (H) = New annual high reached in period (L) = New annual low reached in period

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Troubled insurer to gut IS

CONTINUED FROM COVER 1

standing of our business requirements."

Analysts characterized Empire's decision to outsource IS as highly unusual in an industry where data processing — particularly claims processing — is considered a critical core competency by virtually all other companies.

"This is the first I've heard of a major insurer doing it," said John Hickey, a partner at Kwasha Lipton, a benefits consulting firm in Fort Lee, N.J.

Given the multitude of problems Empire has experienced in the past few years, the firm's decision to outsource IS "reads somewhat like a soap opera," said Scott McCready, an imaging technology expert and principal at IDC/Avante Technology, a market research firm in Framingham, Mass.

Empire, which has steadily lost customers and money due to poor service, steep rate hikes and a slow start in the managed health care market, has been under scrutiny in New York state since regulators uncovered financial irregularities in 1993.

Halfway there

The company has been migrating to a new claims processing system known as CS/90 since 1992. Currently, about 50% of the 26 million claims the company handles annually are processed on that system. Two mainframe-based legacy systems, both more than 25 years old, process the other half of claims filed by the company's 5.4 million individual subscribers.

The insurer also has completed two other systems under an estimated $160 million revamp that began in the late 1980s. An imaging system from Sigma Imaging Systems, Inc. has been fully operational for more than a year, scanning about 100,000 claims daily.

The other system, Excel, is a client/server-based customer service application that enables customer service agents at OS/2-based terminals to access data from the new and old claims processing systems.

But according to several accounts, including those by company insiders, customer service remains dismal.

- **Empire's 1994 enrollments totaled 2.7 million, down 48%, from 5.2 million contracts in 1988.**
- **Empire cut more than 1,900 jobs between 1992 and 1994.**
- **Last year, 10.2% of subscribers trying to contact an Empire customer service representative hung up before getting through. The amount of time a caller had to wait to talk to a representative climbed from 48 seconds in 1993 to 52 seconds in 1994.**

Source: State Review Panel on Empire, Feb. 1995 report

Last year, for example, the average time it took to process an institutional claim in the downstate region was 14.7 days, up from 9.4 days in 1993, according to a report by the state's advisory review panel. Also, of the 26,000 customers who called in for help on a daily basis, 5%, or 1,300, received a busy signal, up from 4.2% the year before.

> Empire's former CEO, Donald Morchower, has publicly acknowledged that the insurer's erratic billing systems were unable to detect false claims, resulting in losses exceeding $40 million.

The first three months of this year saw some progress, however. The percentage of callers who hung up before reaching a customer service representative dropped from 11.4% at the end of last year to 7.4% in March of this year.

"In terms of where we have been, the progress is substantial, but it is still not acceptable," said Paul Wolt, an assistant vice president in charge of tracking corporate performance and a 39-year veteran of the company. "It's fair to say that 1994 was bleak," he added.

IBM

CONTINUED FROM COVER 1

form, starting with Unix networks.

The next major version of NetView for AIX, which is expected in about two months, splits some functions from the RS/6000 management server, Wilczak said. This frees multiple administrators to run the console portion elsewhere as a client: first on other RS/6000 workstations then later on OS/2 and additional platforms.

"Those with large networks want to distribute the management workload according to staff skills," Wilczak said.



IBM's Lynn Wilczak: *NetView for AIX will split some functions from the RS/6000 management server*

The second enhancement — a powerful event correlation engine — should ease the management burden for administrators of any size network. Event correlation describes the ability of a management system to examine situations such as a backup failure and respond automatically by taking predefined action.

For example, when some network difficulty triggers an alert, NetView for AIX will be able to dispatch the proper fix automatically and will be smart enough to page someone for help if that event happens several times.

"Supporting extra consoles sounds nice, but that correlation and automating really sounds good," said John Spiewak, information systems director at TVSM, Inc., a publisher in Horsham, Pa.

Spiewak adopted NetView and five other tools in the SystemView for AIX package to break a cycle of "reactive management," which required users to seek an administrator to restart a system. Now that trouble-ticketing and many routine tasks are automated, Spiewak is setting his sights higher. "I'd like help finding the root cause to problems that cascade from a single event," he said.

IBM has already beefed up NetView for AIX with job scheduling and load leveling functions perfected on the mainframe. Now it is bringing rules- and policy-based correlation functions from NetView for MVS down to distributed environments.

The one and only

This step adds significant automation capabilities that do not exist today in any network management system, according to Wilczak. IBM had considered working with NetLabs, Inc. in Los Altos, Calif., but instead adopted its own technology. Hewlett-Packard Co. is teaming with NetLabs to gain event correlation capabilities.

"Administrators must be able to set a hierarchy of rules to really automate management functions," Wilczak said.

Distributed networks need the automation tools that have been used to manage large-scale SNA networks, said Frank Dzubeck, president of Communications Network Architects, Inc., a Washington consultancy.

"Bringing NetView for MVS capabilities down to this environment is logical, so that the computers can handle a lot of the common problems before requiring human intervention," Dzubeck said.

"The better you automate the mundane management, the more robust you can make the network," he said.

UB hub to support ATM

By Michael Fitzgerald

UB Networks, Inc. in Santa Clara, Calif., last week announced GeoLAN/500, a second-generation hub that will eventually support Asynchronous Transfer Mode (ATM) switching.

UB Networks is pushing scalability and pricing as the hub's main selling points. The 24-port box will start at $234 a port, which UB claims is 30% to 50% lower than the pricing of its main competitors.

For scalability, the GeoLAN/500 has a three-backplane chassis that includes a MultiLAN backplane for Ethernet and Token Ring support, an access and packet-switching backplane and a SuperSwitch, which supports ATM.

While UB Networks is late to the superhub market — trailing competitors such as Cabletron, Inc.'s MMAC-Plus, Bay Networks, Inc.'s System 5000 and Chipcom Corp.'s Oncore — analysts said that because these vendors have shipped only pieces of their products, UB has lost little ground in the competitive footrace.

"Even though UB is late, customers couldn't buy from anyone else, either," said Chip Pettirossi, an analyst at International Data Corp. in Framingham, Mass.

Superhubs "were really positioned as next-generation technology boxes with all this functionality, but ... you couldn't buy it with the functionality the vendor was promising," Pettirossi said.

Centralized management gets boost

IBM expanded host-based management capabilities last week to help central administrators monitor networks at all levels.

Its NetView Version 3.0 for MVS adds support for dynamic tracking of SNA and LU 6.2 topology and status, forwarding alerts over LU 6.2, monitoring additional session types and providing better security and automation.

Following its streamlined SystemView packaging model, this version now comes in three configurations. These include the enterprise option with integrated graphical capabilities for $2,625; the procedural option without graphics, which costs $2,400; and the remote unattended option for $1,960.

IBM is extending NetView's reach to non-SNA resources through enhancements to MultiSystem Manager Version 2.0 for MVS. Now administrators can centrally manage LAN cabling and map the components of Novell, Inc. NetWare and TCP/IP networks.

They can also manage Version 1.1 of LAN NetView Management utilities, and by year's end, they will be able to manage Version 2.0 and multiport bridges.

The new event correlation function dynamically matches different managed resources and creates graphic navigation paths between them, with expanded automation and customized views to assist operators, IBM said.

Prices vary by network configuration.

— Patrick Dryden

IS must reassert core values

As IS pushes toward client/server computing, its well-founded sense of apprehension is inhibiting a necessary transformation within its ranks. If client/server is here to stay, IS must accept its conflicting forces and take the lead in imposing some order.

IS is not a laggard on the client/server front. It understands the shift wrought by desktop computing and the value of letting end-user priorities rise to the top of the heap. But it also understands the complexities, inherent conflicts and potential chaos of the trend.

No one talks about it any more, but IS has a clear memory of the mainframe environment, with its residual values of limited access, software reliability, data integrity and a full range of tools for those with the skills to use them.

The mainframe's fall from grace was so sudden that its adherents lost their confidence in what the mainframe represented. Unaccustomed to explaining themselves to the outside world, the mainframe's backers fell silent before the rise of the PC and the resulting seismic shift within their organizations.

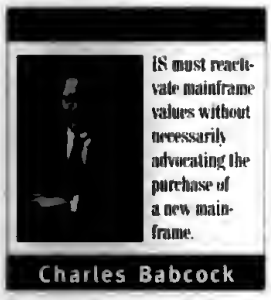
If asked — and they usually weren't — they were unable to articulate the convictions that had recently animated their world. They knew only that they had come to represent unresponsiveness in the face of change. As a result, many IS managers stifled their critical thinking or surrendered to the new age without trying to advance their staffs' legitimate core values.

Now they are fixed in a dilemma because of that inarticulate stance. Their budgets and staffs for the most part are frozen; PCs are purchased outside the IS budget; and the demands of end users keep growing all around them. There is a way out, but it requires reactivating the values of the mainframe environment without necessarily advocating the purchase of another mainframe.

Client/server has progressed to the point where an IS staffer can win a receptive audience if he advocates reliable systems that scale up to thousands of users.

These second-generation client/server systems will be managed by a tiny corps of skilled technicians. The systems will be modified in a strict, controlled environment and automatically monitored for stresses that could lead to failure. Servers will be fat with corporate data that can be used by many people throughout the organization, but only a privileged few will change the data in a way that would require any central database update.

IS can continue to embrace client/server without necessarily believing everything will eventually move to the desktop. In addition to knowing the software dialogue that goes on between client and server processors, IS must recognize the real dialogue that goes on between end users and top management.



IS must reactivate mainframe values without necessarily advocating the purchase of a new mainframe.

Charles Babcock

IS must accept the desirability of meeting end-user needs while asserting the value of predictability, reliability and control. In short, it must internalize the contentious forces that client/server represents and try to bring the constraints of the former mainframe world to bear on them. The more actively it does so, the more likely it is to capture the backing of the organization as a whole.

IS must adopt the look and feel of end users while asserting the flinty, uncompromising needs of a computing infrastructure. Like client/server, that is a difficult, two-tiered act.

Part of the assignment is getting a better grasp of what role Windows NT and OS/2 will play in the future of your organization. PCs will continue to proliferate along with processors to serve them, and NT or OS/2 will provide the cheap operating system with mainframe-like qualities for those servers. MVS, VM, VMS and Unix will retreat.

While the world remains dazzled by the potential of the PC, IS staffs must think, plan and act as if the values of their former world still apply to this one, regardless of the seeming dysfunction between them.

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Inside Lines

Psssst! P6 is coming!

The whispering campaign about Intel's next-generation chip has begun. Vendor sources said Intel will make about 150,000 P6 chips in the fourth quarter of this year. It's a tiny amount but enough to get the ball rolling. The whispers get fainter when it comes to the mobile version of P6. Intel will say this year how it plans to make the chip palatable for notebooks. Its current design is unworkable for portables, but few vendors expect to ship one in a product before the fourth quarter of 1996.

Ready when you are

No, it's not a mystery about why the expensive 100M bit/sec. networking technology hasn't caught fire with users, especially outside of the server realm. Still, Compaq and Hewlett-Packard plan to build the capability into their desktops, sources close to HP said. Compaq is expected to use Texas Instruments' ThunderLAN chip, which supports regular 10BaseT as well as 100BaseT and HP's 100M-bit VGAnyLAN alternative. Look for boxes to appear with this support late this summer, the sources said.

There's no place like home

Compaq will break its consumer PC business into a separate division, with its own profit and loss responsibilities, according to Ross Cooley, senior vice president of North American operations. Currently, Compaq's corporate and consumer lines fall under one common desktop division. The move to split Compaq's desktop group into two comes when Compaq's consumer business has been under pressure from newly arrived rival Packard Bell, which recently zoomed past Compaq to the top of the desktop PC heap.

But don't have a cow about it, OK?

A multiplatform Visual Basic knockoff that IBM is developing will not match completely with Microsoft's Windows-based original in a couple areas, which could be a drawback for some potential users. IBM officials acknowledged at the company's developer's conference in New Orleans last week that only a limited number of third-party Visual Basic controls will be ported to the OS/2 version when the software ships later this year. The IBM knockoff, code-named Bart after everyone's favorite cartoon problem child, will be announced in late June, sources said.

Small comfort

Also on the IBM development front, IBM's port of the object-based Smalltalk language to MVS has hit some scaling snags. The company is no longer committed to delivering it to mainframe shops this year. While some field testing is under way, IBM is still struggling to tune Smalltalk so that it will yield the kind of performance required by large CICS and IMS transaction processing applications. The native Smalltalk port remains "part of the strategy," but IBM doesn't have a definite shipment date in mind.

Here's how to order!

To get a prerelease version of OS/2 for the PowerPC, order one of IBM's long-awaited PowerPC-based machines expected to ship June 19 and make sure to tell IBM you want the beta version of OS/2 for the PowerPC preloaded on the system. The final PowerPC version of OS/2 isn't due out until September, according to IBM.

Hey, Microsoft groupies. Did you catch NBC's profile of Bill Gates on Friday? Called "Tycoon," the NBC news special was hosted by Tom Brokaw and is the result of following Gates around for a month and interviewing his family and friends. Hmm, what a coincidence that NBC and Microsoft just signed a pact to collaborate on multimedia entertainment and education products for The Microsoft Network, CD-ROMs and interactive television! In one interview, Bill's dad recalled that as a Boy Scout, Bill was good at selling nuts to raise money. Little did he know that that was how Bill would take over the computer world a few years later, by selling IBM an operating system on a royalty basis. Readers with nutty tips to peddle can reach Computerworld on our 24-hour voice-mail tip line at (508) 820-8555 or our toll-free number at (800) 343-6474. News editor Maryfran Johnson can be reached by phone at (508) 820-8179 or via the Internet at mjohnson@cw.com.

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